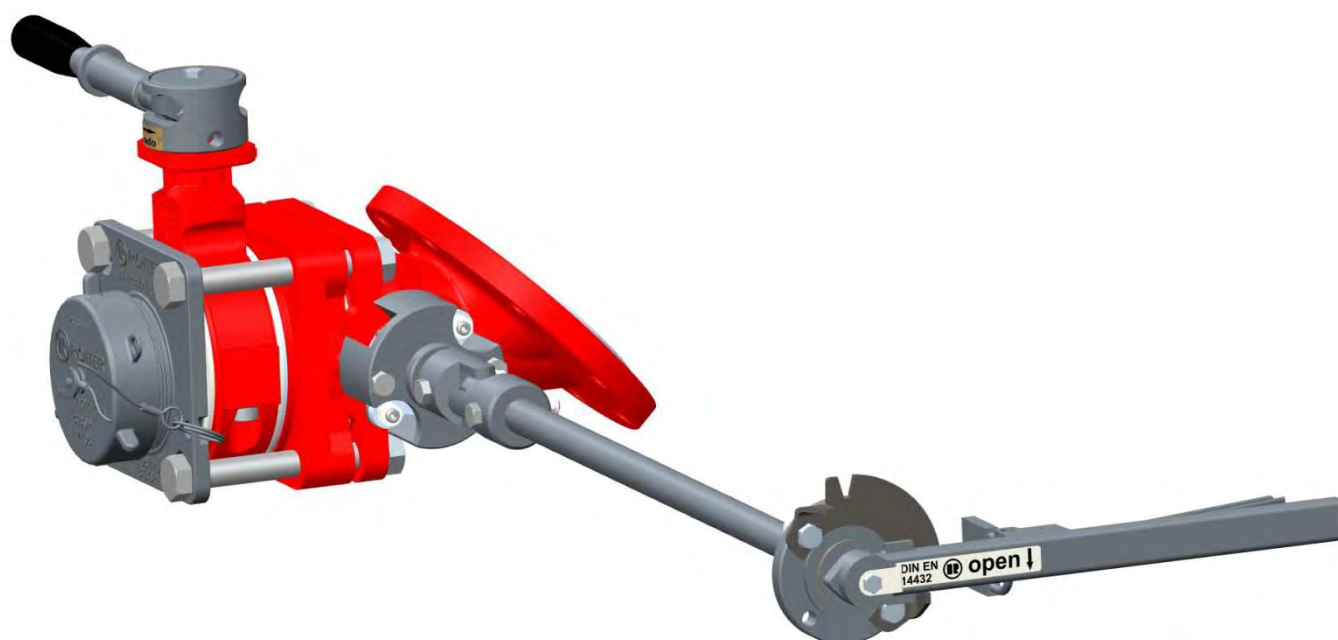


Series TE/F, NKS-T/F, 3" BSP

Foot valve, Shut-off valve, Outlet
flange & cap



Keep for future use!

transport, installation, operation and maintenance

transport, installation, operation and maintenance

Subject to change without notice.

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9520-055-en Revision 03 Edition 05/2017

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Relevant documents

- ◆ Declaration of conformity acc. to the Pressure Equipment Directive 2014/68/EC
- ◆ Manufacturer Declaration TA-Luft
- ◆ Manufacturer Declaration SIL
- ◆ Form for Safety Information Concerning the Contamination QM 0912-16-2001_en
- ◆ Related drawing:
Foot valve (TE/F)
Sectional drawing **9520-00-3300**
Dimensional drawing **9520-00-4300**

Shut-off valve (NKS-T)
Sectional drawing **9520-00-3310**
Dimensional drawing **9520-00-4310**
Outlet flange & cap (3" BSP)
Sectional drawing **9520-00-3320**
Dimensional drawing **9520-00-4320**

1 Technical data

Manufacturer:

Richter Chemie-Technik GmbH
Otto-Schott-Str. 2
D-47906 Kempen
Telephone : +49 (0) 2152 146-0
Fax: +49 (0) 2152 146-190
E-Mail : richter-info@idexcorp.com
Internet:

Designation :

Foot valve with ball/stem unit or Al₂O₃-ball / stem and Richter ENVIPACK self-adjusting universal stuffing box, two-piece housing.
Shut-off valve, housing design: wafer-style, disc/stem unit: plastic-lined
Outlet flange & cap

Series:

TE/F → Version with lockable lever
NKS-T/F →

Certified to Clean Air Act (TA Luft)
Strength and tightness (P10, P11) of the pressure-bearing body tested to DIN EN 12266-1.
Gas-tight (P12) in the seat to DIN EN 12266-1, leak rate A

Face to face:

TE/F

177 mm, see also **section 10.6**

NKS-T/F

DIN EN 558-1, basic series 20
(ISO 5752 basic series 20)
or API 609 table 2
or MSS SP-67 table 3

Flange connecting dimensions: DIN EN 1092-2, type B

(ISO 7005-2 type B) PN 10 or flange drilled to ASME B16.5 Class 150.

Materials:

Body material: Ductile cast iron EN-JS 1049 / ASTM A395

Lining material:

TE/F

PFA .../F
On request: antistatic .../F-L

NKS-T/F

PTFE .../F
On request: antistatic .../F-L
modified TFM-PTFE
Disc/stem unit: PFA-lined or ...-F

Temperature range :

see pressure-temperature diagram in **section 1.8**.

Operating pressure:

DN 80 max. 10 bar (PN 10)
see pressure-temperature diagram in **section 1.8**.

Ball valve sizes in mm:

DN 80.

Installation position :

Horizontal, with ball/stem unit or Al₂O₃-ball with relief hole a directional arrow indicates the flow direction. See also **section 6.2**.

Weight, ball valve manually operated:

TE/F

DN 80: approx. 17 kg
Ball valve: 13 kg
Actuation: 4 kg

NKS-T/F

Free shaft end 4.5 kg
Hand lever: 0.7 kg

Dimensions and individual parts:

See sectional drawing in **section 10**.

Wear parts: seat rings

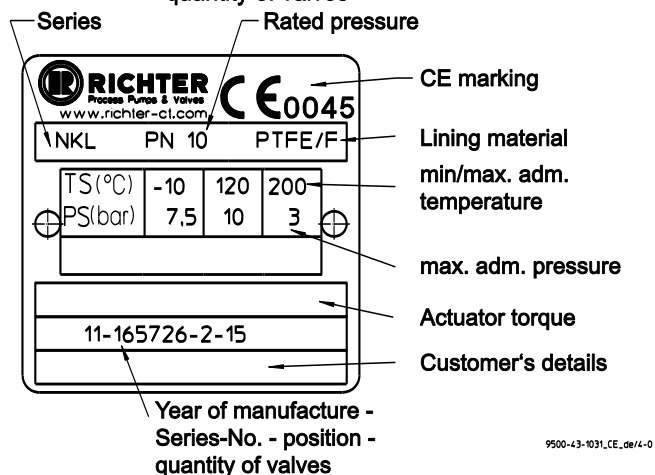
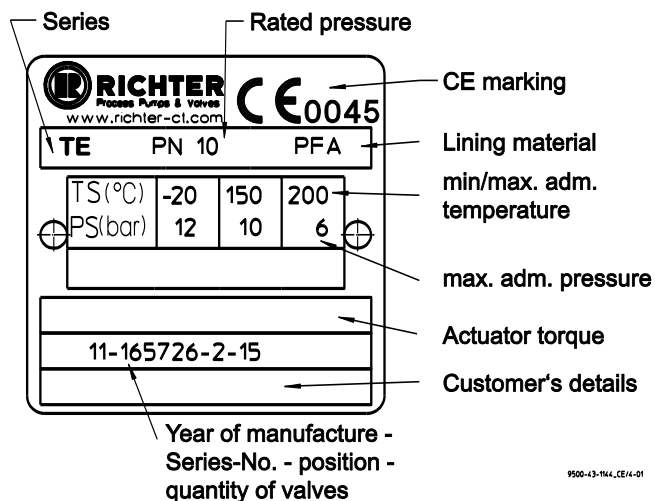
Packing components
Ball/stem unit
Al₂O₃-ball
Stem

1.1 Type plate, CE and body markings

The stainless steel name plate is undetachably riveted to the body.

If the operator attaches his identification, it must be ensured that the valve matches the application in question.

Example of name plate with CE marking:



Housing identification:

The following are visible on the body according to DIN EN 19 and AD 2000 A4:

- ♦ Nominal size
- ♦ Rated pressure
- ♦ Body material
- ♦ Manufacturer's identification
- ♦ Melt number/Foundry identification
- ♦ Foundry date



The sign with the standard designation DIN EN 14432 "Tanks for the transport of dangerous goods – Tank equipment for the transport of liquid chemicals and liquefied gases – Product discharge and air inlet valves " and the opening direction of the ball valve is located on the actuating lever and is with the fastening screw of the lever.

1.2 Tightening torques

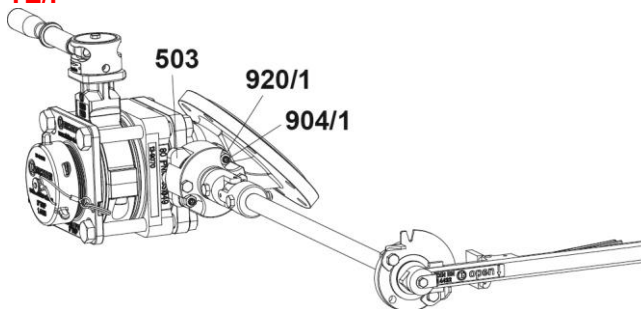
All screws greased, tighten in diametrically opposite sequence!

The tightening torques for pipe screws and body screws mentioned must not be exceeded. For an exception, see **Section 8**, Flange connection valve/pipe is leaking.

The following tightening torques are recommended.

Packing screws

TE/F



503 packing gland follower

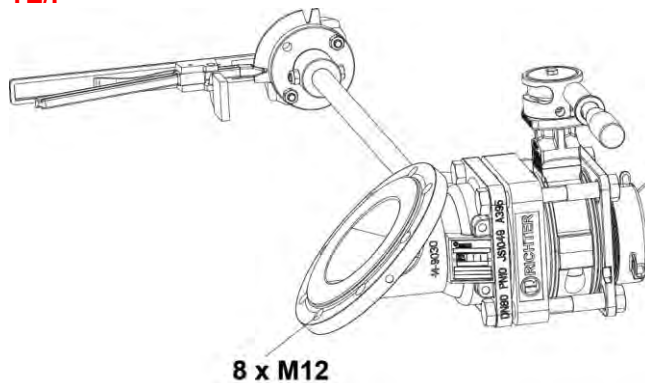
904/1 setscrew

920/1 hex. nut

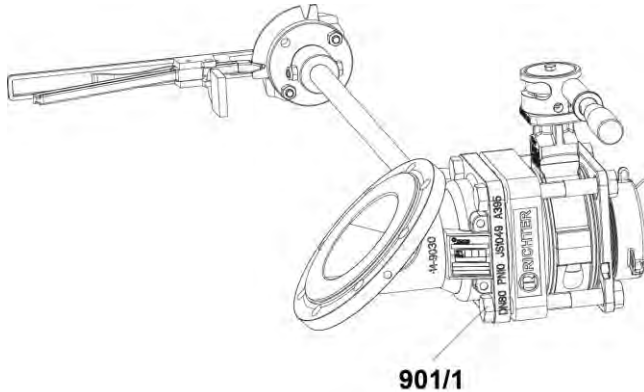
Tighten packing gland follower **503** until spring gland follower **502** is in contact without any gap.

NKS-T/F

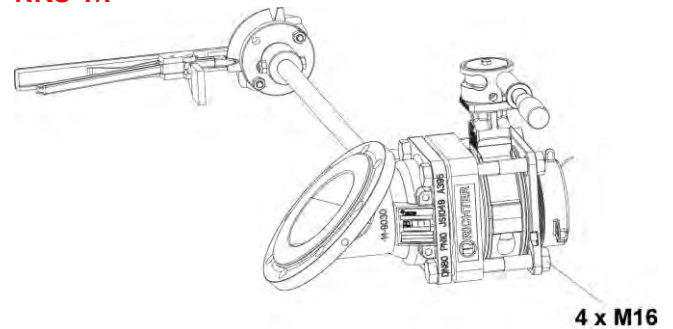
screws	Tightening torque	
[ISO/DIN]	[Nm]	[in-lbs]
2 x M8	3	27

Screws 45 ° -Tank connection flange**TE/F****8 x M12**stud bolt M12 + hex. nut (**8 x M12**)
45° Tank connection flange

Flange Nominal size		screws [ISO/DIN]	Tightening torque	
[mm]	[inch]		[in-lbs]	[Nm]
80	3"	8 x M12	225	25

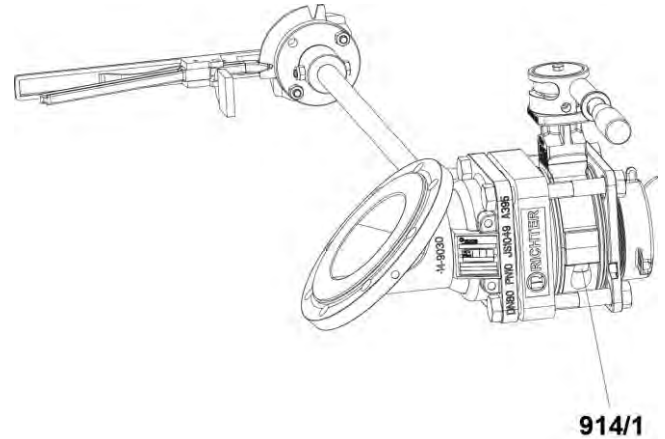
Screws square flange**TE/F****901/1****901/1** hex. screw (4 x M16)

Flange Nominal size		screws [ISO/DIN]	Tightening torque	
[mm]	[inch]		[in-lbs]	[Nm]
80	3"	4 x M16	400	45

Rohrleitungsschrauben**NKS-T/F****4 x M16**

hex. screw (4 x M16)

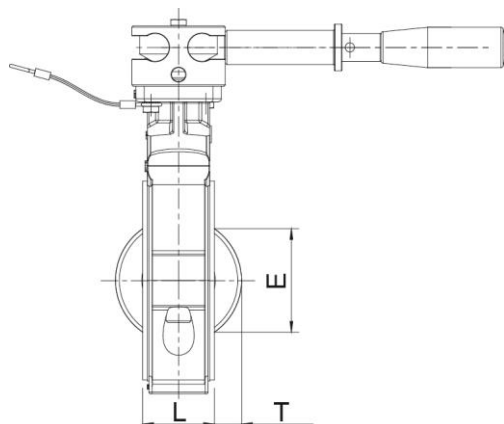
Flange Nom. size		screws [ISO/DIN]	Tightening torque	
[mm]	[inch]		[in-lbs]	[Nm]
80	3"	4 x M16	266	30

Body screws**NKS-T/F****914/1****914/1** hex. socket screw (2 x M12)

Nominal size		Hexagon socket head screws [ISO/DIN]	Tightening torque	
[mm]	[inch]		[Nm]	[in-lbs]
80	3"	2 x M12	50	442

1.3 Dimensions

NKS-T/F



Nominal size		E1	T1	L2	Connection3
[mm]	[inch]	[mm]	[mm]	[mm]	
80	3"	67	17.5	46	F07

- 1 See also **section 6.3**, paragraph 1
- 2 Face to face to DIN EN 558-1, series 20 (ISO 5752, series 20)
- 3 Connections for worm gears and brackets as per DIN ISO 5211

The inside diameter of the mounted pipe flanges must always be greater than the dimension E in the table!
For more dimensions, see drawings in **Section 10**.

1.4 Flow rate value kv100 [m³/h]

Nominal size		Angle of opening							
[mm]	[inch]	20°	30°	40°	50°	60°	70°	80°	90°
80	3"	5	22	47	82	126	197	264	282

1.5 Actuating torques

TE/F

Test medium: water 20 °C

Higher actuating torques may occur with other media.

Stem unit

DN	Δp in bar			
	≤ 3	6	10	max. adm.
[mm]	[Nm]	[Nm]	[Nm]	[Nm]
80	25	25	25	225

Al₂O₃-ball

DN	Δp in bar			
	≤ 3	6	10	max. adm.
[mm]	[Nm]	[Nm]	[Nm]	[Nm]
80	25	30	35	120

NKS-T/F

Flange nom. size [mm] [inch]		Mderf	Mdmax
[mm]	[inch]	[Nm]	[Nm]
80	3"	46	180

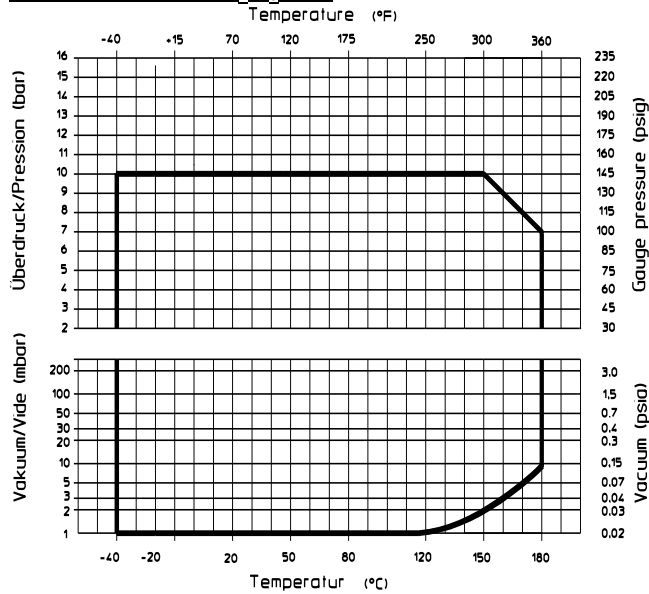
1.6 Pressure-temperature diagram



When used in the minus temperature range, the regulations applicable in the country in question must be observed.

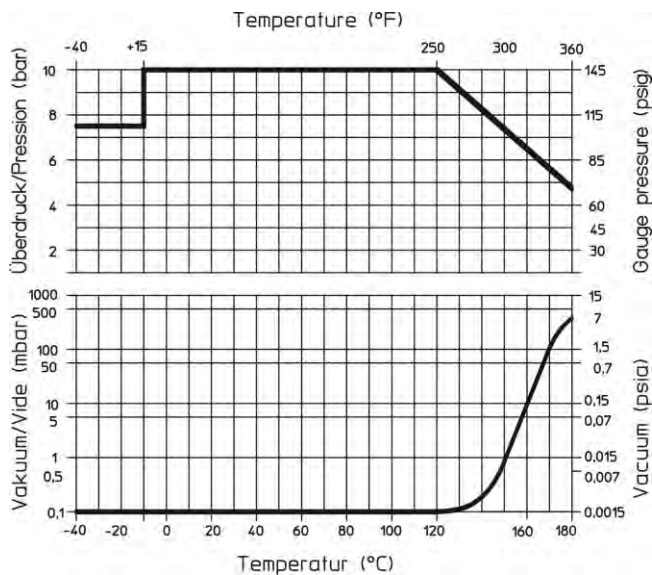
TE/F

ball/stem unit + Al₂O₃-ball



NKS-T/F

When used in the area of application of ASME, the low temperature of ASTM A395 is limited to 20°F (29°C).



2 Safety

This operating manual contains fundamental information which is to be observed during installation, operation and maintenance.

It must be read before installation and commissioning!

This operating manual must always be available at the place of use of the valve.

For valves which are used in potentially explosive areas, see **section 3**.

Installation, operation and maintenance are to be performed by qualified staff.

The area of responsibility, authority and supervision of the staff must be regulated by the customer.



General hazard symbol!

People may be put at risk.



Safety symbol! The ball valve and its function may be put at risk if this safety symbol is not observed.

It is imperative to observe warnings and signs attached directly to the ball valve and they are to be kept fully legible.

Non-observance of the notes on safety may result in the loss of any and all claims for damages.

For example, non-observance may involve the following hazards:

- ♦ Failure of important functions of the valve/plant.
- ♦ Risk to people from electric, mechanical and chemical effects.
- ♦ Risk to the environment through leaks of hazardous substances.

2.1 Intended use

TE/F

Ball valves are on/off valves.

Richter ball valves, shut-off and control butterfly valves are pressure containing components in accordance with the Pressure Equipment Directive (PED) 2014/68/EC for the passage and shut-off of fluids. The valves are suitable for vapours, gases and non-boiling liquids of group 1 according to the PED and have a corrosion-resistant plastic lining.

NKS-T/F

The field of application for the shut-off and control butterfly valves include:

- ♦ Corrosive, pure and slightly solids-laden liquids, vapours and gases
- ♦ Materials in contact with the medium which are FDA-compliant can be used for food and pharmaceutical feedstock as well as in biochemistry.
- ♦ Powdered and granulated non or low abrasive solids

Shut-off and control butterfly valves with a plastic-lined disc/stem unit are used for highly aggressive, corrosive media.

Shut-off and control butterfly valves with a stainless steel disc/stem unit are suitable for less aggressive media, are cheaper and beneficial for thorough valve cleaning.

Product features:

- ♦ Wide sealing surfaces of the body lining
- ♦ Long valve neck for optimum heat insulation
- ♦ Maintenance-free, self-adjusting stem seal
- ♦ Leak-proof to the atmosphere in accordance with the German Clean Air Act (TA-Luft) (if equipped with optional safety stuffing box).

Solids can lead to increased wear, damage to sealing surfaces or to a reduction in the service life of the valve.

The operator must carefully examine in the event of operating data other than those provided whether the designs of the valve, accessories and materials are suitable for the new application (consult the manufacturer).

2.2 For the customer / operator

If a valve is used, the operator must ensure that

- ♦ actuators which are retrofitted are adapted to suit the valve
- ♦ hot or cold valve parts are protected by the customer against being touched
- ♦ the valve has been properly installed in the pipe system
- ♦ the operating conditions stipulated in the data sheet are not exceeded in continuous operating mode.

This is not the manufacturer's responsibility.

Loads caused by earthquakes were not allowed for in the design.



Ball valves / butterfly valves at the end of a pipe (end valve) must be closed at the free connection with a blind flange and secured against unauthorized actuation.

Fire protection to DIN EN ISO 10497 is not possible (plastic lining and plastic components).

2.3 Improper operation

The operational safety of the valve supplied is only guaranteed if it is used properly in accordance with **section 2.1** of this operating manual.



The operation limits specified on the identification plate and in the pressure-temperature diagram must under no circumstances be exceeded.

3 Safety notes for applications in potentially explosive areas based on the Directive 2014/34/ EC (Atex)

The valves are intended for use in a potentially explosive area and are therefore subject to the conformity assessment procedure of the directive 2014/34/EC (ATEX).

As part of this conformity assessment, an ignition hazard analysis to EN 13463-1 to satisfy the fundamental safety and health requirements was conducted with the following result:

- ♦ **The valves do not have any ignition source of their own and can be operated both manually as well as mechanically/electrically.**
- ♦ **The valves are not covered by the scope of application of the ATEX directive and therefore do not need to be identified accordingly.**
- ♦ **The valves may be used in a potentially explosive area.**

Supplementary notes:

- ♦ **Electric/mechanical actuators must be subjected to their own conformity assessment to ATEX.**

It is imperative to observe the individual points of intended use for application in a potentially explosive area.

3.1 Intended use

Improper operation, even for brief periods, may result in serious damage to the valve.

In connection with explosion protection, potential sources of ignition (overheating, electrostatic and induced charges, mechanical and electric sparks) may result from these inadmissible modes of operation; their occurrence can only be prevented by adhering to the intended use.

Furthermore, reference is made in this connection to the Directive 95/C332/06 (ATEX 118a) which contains the minimum regulations for improving the occupational health and safety of the workers who may be at risk from an explosive atmosphere.

A difference is made between two cases for the use of chargeable liquids (conductivity $< 10^{-8}$ S/m):

1. Chargeable liquid and non-conductive lining

Charges can occur on the lining surface. As a result, this can produce discharges inside the valve. However, these discharges cannot cause ignitions if the valve is completely filled with medium.

If the valve is not completely filled with medium, e.g. during evacuation and filling, the formation of an explosive atmosphere must be prevented, e.g. by superimposing a layer of nitrogen. It is recommended to wait 1 hour before removing the valve from the plant in order to permit the elimination of static peak charges.

This means that, to safely prevent ignitions, the valve must be completely filled with medium at all times or else a potentially explosive atmosphere must be excluded by superimposing a layer of inert gas.

2. Chargeable liquid and conductive lining

No hazardous charges can occur as charges are discharged direct via the lining and shell (surface resistance $< 10^9$ Ohm, leakage resistance $< 10^6$ Ohm).

Static discharges of non-conductive linings are only produced through the interaction with a non-conductive medium and are therefore the responsibility of the plant operator.

Static discharges are not sources of ignition which stem from the valves themselves!

- The temperature of the medium must not exceed the temperature of the corresponding temperature class or the maximum admissible medium temperature as per the operating manual.
- If the valve is heated (e.g. heating jacket), it must be ensured that the temperature classes prescribed in the Annex are observed.
- To achieve safe and reliable operation, it must be ensured in inspections at regular intervals that the valve is properly serviced and kept in technically perfect order.
- Increased wear to the valve can be expected with the conveyance of liquids containing abrasive constituents. The inspection intervals are to be reduced compared with the usual times.
- Actuators and electric peripherals, such as temperature, pressure and flow sensors etc., must comply with the valid safety requirements and explosion protection provisions.
- The valve must be grounded.
This can be achieved in the simplest way via the pipe screws using tooth lock washers.

Otherwise grounding must be ensured by different measures e.g. a cable link.

- Attachments such as actuators, position controllers, limit switches etc. must satisfy the relevant safety regulations as regards explosion protection and, if required, be designed in compliance with Atex.
- Special attention must be paid to the appropriate safety and explosion protection notes in the respective operating manuals.
- Plastic-lined valves must not be operated with carbon disulphide.

4 Safety note for valves, certified to Clean Air Act (TA Luft)

Certificate / Manufacturer Declaration Validity is dependent on the operating instructions being read and observed.

- Carry out regular maintenance intervals and check the tightness of the screw connections and tighten as necessary.

5 Transport, storage and disposal



For all transport work, observe generally accepted engineering practice and the accident prevention regulations.



The valve is supplied with flange caps. Do not remove them until just before installation. They protect the plastic surfaces against dirt and mechanical damage.

Handle the goods being transported with care. During transport protect the valve against impacts and collisions.

Directly after receipt of the goods, check the consignment for completeness and any in-transit damage.

Do not damage paint protection.

NKS-T/F

Die Einlagerung mit ganz geschlossenem Klappenteller oder mit einem Öffnungswinkel größer als 15 ist unzulässig.

5.2 Transport preparations

NKS-T/F

During transport the disc/stem unit must not project beyond the body dimensions.

Actuated with lever

When the valve is in the closed position, the disc/stem unit is to be 10-15° open.

Attach flange caps.

5.1 Storage

If the valve is not installed immediately after delivery, store them properly.

The valves be stored in a dry, vibration-free and well-ventilated room at as constant a temperature as possible.

Protect elastomers against UV light.

Generally, a storage period of 10 years do not exceeded.

5.3 Return consignments



Valves which have conveyed aggressive or toxic media rinse and clean before being returned to the manufacturer's works.

It is **imperative** to enclose a **safety information sheet / general safety certificate** on the field of application with the return consignment.

Pre-printed forms are enclosed with the installation and operating manual.

Safety precautions and decontamination measures are to be mentioned.

5.4 Disposal



Risk of personal injury or damage to the environment due to the medium!

- ♦ Wear protective clothing when work is performed on the valve.
- ♦ Prior to the disposal of the valve:
 - Collect any medium, etc. which has escaped and dispose of it in accordance with the local regulations.
 - Neutralise any medium residues in the valve.
- ♦ Separate valve materials (plastics, metals, etc.) and dispose of them in accordance with the local regulations.

6 Installation

- ♦ Examine valve for in-transit damage, damaged valves do not install.
- ♦ Before installation the valve and the tank connection must be carefully cleaned to remove any dirt, especially hard foreign matter.
- ♦ During installation, pay attention to the correct tightening torque, aligned pipes and tension-free assembly.

6.1 Flange caps and gaskets

- ♦ Contamination of or damage to the sealing surfaces is best avoided if the protective caps remain on the flanges until just before installation.

If plastic sealing surfaces, e.g. on mating flanges made of metal or enamel, can be damaged, use PTFE-lined seals with a metal inlay.

These gaskets are available as special accessories in the Richter range.

6.2 Installation position

Installation is independent of the direction of flow.

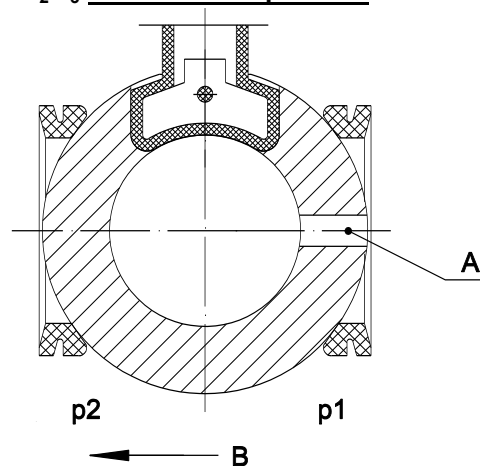
Any fitting position can be chosen.

TE/F

Usually the installation is horizontal, others are possible.

Otherwise, this is marked with a directional arrow on the ball valve, as with ball/stem unit or Al₂O₃ ball with relief bore.

Fig. 1 Al₂O₃-ball in closed position



- A relief bore
B direction of flow

NKS-T/F

Except solids-containing liquids:

With solid containing media butterfly valves are preferably installed with horizontally positioned stem and bottom half of disc opening into flow direction.

6.3 Installation

NKS-T/F

- Can the disc open in the pipeline? dimensions see section 1.3.
- Is the disc open 10 – 15°?
- Mount butterfly valve and gaskets.
- Tighten the piping bolts crosswise and hand-tight.
- By means of a test actuation ensure that the disc is able to freely rotate.
- With the disc slightly opened, tighten the piping bolts crosswise. For tightening torques, see section 1.2.



Butterfly valves which are used as end valves must be sealed with a blind flange at the free connection end and appropriately secured against unauthorised activation.

When installing the complete tank valve,

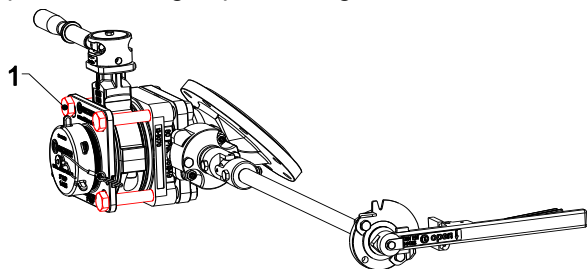
- TE/F
- NKS-T/F
- 3" BSP

make sure that the required screwing depth of the housing screws (1) is ensured.

This means that the assembly is only carried out with the components supplied by Richter.

No seals may be installed between the individual components.

If other than Richter components are used, other housing screws (1) may have to be used if the required screwing depth is not guaranteed.



7 Operation

7.1 Initial commissioning

Normally, the valves have been tested for leaks with air or water. Prior to initial operation check cover screws. For tightening torques, see section 1.2.



Unless otherwise agreed there could be residual amounts of water in the flow section of the valve; this could result in a possible reaction with the operating medium. Unless otherwise agreed, there could be residual amounts of water in the flow section of the valve; this could result in a possible reaction with the medium.

6.4 Grounding

TE/F

The valve must be grounded.

The simplest solution is to use tooth lock washers which are placed under one pipe bolt of each flange.. The valve must be grounded. The simplest solution is to use tooth lock washers which are placed under one pipe bolt of each flange.

At the customer's request a setscrew M6 with a hex. nut and washer will be provided at each flange as an additional grounding connection.

In other cases earthing is to be secured through other measures, e.g. cable bridges.

The ball/stem unit **201** and stem **202** are grounded using a grounding spring washer **557**.

NKS-T/F

One end of the grounding rope **532** is attached with a hex. nut **920/1** and a tooth lock washer **936/1** to the underside of the head flange.

The other end is metallically secured in the plant.

6.5 Pressure test

TE/F

The test pressure PT of a valve must not exceed the value of 1.5 x PS(PN) as per the identification of the valve.

To prevent leaks, retighten all connection screws after the initial loading of the valve with operating pressure and operating temperature. For tightening torques, see section 1.2.

7.2 Improper operation and their consequences

TE/F

- ◆ The ball valve must not be subjected to bending on the tank. The connected hose or pipe must be supported.



- ◆ The ball valve is an on/off valve and shall not be operated in an intermediate position. Damage to the seat rings or the ball/stem unit or Al_2O_3 -ball and stem could occur.
- ◆ Avoid crystallization. Crystallization can cause damage to the seat ring and the ball/stem unit or Al_2O_3 -ball and stem. This can be prevented by heating. In extreme cases this may cause blocking.
- ◆ If the ball blocks, do not apply force as the ball/stem may break if the max. adm. torque is exceeded.
- ◆ Increased wear occurs in operation with solids contents.
- ◆ Operation during cavitation leads to increased wear.
- ◆ Non-observance of the pressure-temperature diagram can lead to damage.
- ◆ Do not subject the lever to heavy loads; the lever or ball valve may be damaged.
- ◆ Do not use a lever extension as otherwise there is a risk of damage.

NKS-T/F

- ◆ Do not operate the butterfly valve without valve actuation. Otherwise the disc will be uncontrollably set in motion by the medium flow.
- ◆ Butterfly valves with a hand lever should never be abruptly opened or closed. This can lead to water hammer effects.
- ◆ Dissipate thermal expansion volumes in shut-off pipes.
- ◆ If the plastic swells up due to the effect of the medium, this can result in the functional parts jamming.
- ◆ Increased wear occurs in operation with solids contents.
- ◆ There must be no foreign matter on the sealing surfaces.
- ◆ Operation during cavitation leads to increased wear.
- ◆ Non-observance of the pressure-temperature diagram can lead to damage.
- ◆ Do not subject the lever to heavy loads; the lever or valve may be damaged.
- ◆ Do not use a lever extension as otherwise there is a risk of damage.

7.3 End position locking

DIN EN 14432:2014-12

„5.2.2 The operating mechanism shall be protected from inadvertent operation in transit either by a latching device or by locating within an enclosure.“

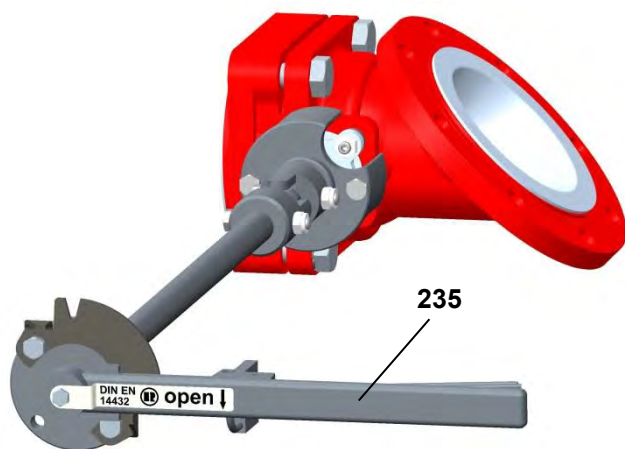
Richter has decided to protect against unintentional operation for a locking device with additional locking function.

The locking device consists of a locking sleeve **246** with spring return, which engages the end positions in a bore. If the locking sleeve **246** pulled outward, the lock is released. When the locking sleeve **246** is released, it engages in the end positions in the holes and locks the valve.

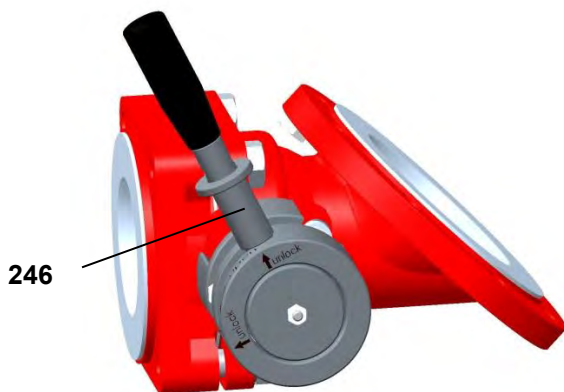
The additional locking function (not required by the standard) is carried out by a commercially available padlock that is hooked into a hole in front of the locking sleeve **246** and thus prevents the release of the lock.

On the model TE/F with stem extension, there is no locking sleeve, but a lockable lever **235** (spring lever with locking function), in which also with a standard padlock, the release of the lock is prevented.

TE/F

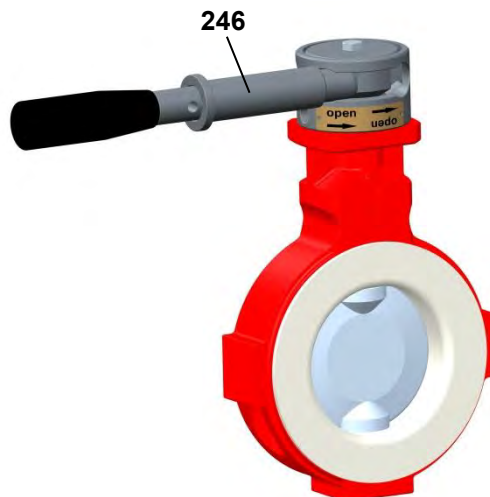


TE/F with stem extension



TE/F with locking lever

NKS-T/F



7.4 Shutdown

TE/F

The local regulations are to be observed when dismantling the valve.

Prior to undoing the flange connection ensure, that the plant is depressurised and emptied.



Prior to the start of maintenance work, clean the valve thoroughly. Medium residue may be in the valve even if it has been properly drained and flushed.

After dismantling, immediately protect the valve flanges against mechanical damage by using flange caps. See also [section 6.1](#).

NKS-T/F

Before loosening the flange bolts:



- ◆ ensure plant to be free of pressure
- ◆ flush out medium
- ◆ observe safety regulations

Prior to starting any repair work, the valve is to be thoroughly cleaned. Medium residue may be in the valve even if it has been properly drained and flushed.

After dismantling, immediately protect the valve flanges against mechanical damage by using flange caps. See also [section 6.1](#).

8 Malfunctions

♦ Flange connection ball valve/pipe is leaking

Retighten the flange screws to a tightening torque according to **section 1.2**. If this does not remedy the leak, the recommended torques may be exceeded by 10%.

If this also fails to stop the leak, dismantle and inspect the valve.

TE/F

♦ Flange connection main body/body end piece is leaking

Retighten body screws. See paragraph "Flange connection ball valve/pipe is leaking".

♦ Packing is leaking

Retighten packing nuts according to the details in **section 1.2**.

♦ Ball valve does not operate

Is there foreign matter in the valve?

Is the actuation rod not jammed, if necessary lubricating?

♦ The ball no longer closes completely

Is the stem deformed?

Is the stem extension worn?



Never apply force to the lever or use an extension.

1. Try to get the ball valve working again by moving the lever to and from.
2. Remove the lever stop and try to switch against the normal direction of rotation.
3. If actuation is not possible with the max. admissible actuating torque as per **section 1.5**, dismantle ball valve and inspect individual components.

NKS-T/F

♦ Stem passage leaking

With no safety stuffing box:

Dismount valve and repair.

With safety stuffing box:

First of all, the packing gland follower can be tightened.

For tightening torques, see **section 1.2**.

Then dismount the valve as quickly as possible and repair.

♦ Medium leaking at the partition between lower and upper halves

Dismount valve and repair, probably the stem seal is not tight.

♦ Valve does not switch

Is there foreign matter in the valve?

♦ The bore of the valve is leaking

Wear at the valve actuation ?

Do limit stops have to be adjusted?

Is the shaft deformed?

Deformation, damage or wear to body lining or disc?

9 Maintenance

♦ All repair work is to be performed by qualified personnel using the appropriate tools.

♦ For the arrangement, designation and item numbers of all parts of the valve, see **section 10**.

♦ Order spare parts with all the details in acc. with the valve identification.

♦ Only original spare parts may be installed.

♦ To prevent leaks, a regular check of the connection screws make in line with the operating requirements.

For tightening torques, see **section 1.2**.

NKS-T/F

♦ When disassembling and assembling the valve, attention is to be paid to the tables and drawings in **section 1** and **10**.

♦ As the body lining **409** is drawn over the disc/stem unit **221** while warm, this work should only be carried out by the manufacturer.

♦ Has the valve been shut down, drained and flushed in accordance with the regulations?

See also **section 7.3**.



If assembled incorrectly, individual components of the valve may be damaged and this can result in malfunctions during operation.

TE/F**9.1 Dismantling ball valve with ball/stem unit****9.1.1 Ball valve with lever**

- Remove lever **235**.
- Take out grounding spring washer **557**.
- Dismantle packing gland follower **503** and spring gland follower **502**.
- The thrust ring **405/1**, packing bellows **403** and retaining washer **526** are one unit and it is levered out using 2 screwdrivers.
- Undo screw connection body end piece **102** / main body **101**.
- Remove body end piece **102**.
- Remove ball/stem unit **201** in closed position. Make sure that you do not damage the body lining.
- Remove seat rings **401**.

9.1.2 Packing bellows

- Remove retaining washer **526**.
- Separate thrust ring **405/1** and packing bellows **403** by pushing them apart.

9.2 Assembly

- Prior to assembly all parts are to be cleaned and the plastic-lined parts checked for damage.
- Insert seat rings **401** in the main body **101** and body end piece **102**.
- Mount ball/stem unit **201** in closed position. Make sure that you do not damage the body lining.
NOTE: An additional bore in the ball/stem unit, must lie on the p1 side in the closed position.
- Mount body end piece **102**. Tighten the greased housing screws with a tightening torque according to **section 1.2**.

9.2.1 Packing bellows

- Press thrust ring **405/1** into packing bellows **403**.
- Install retaining washer **526**.
- Press unit into main body **101**.
- Press in grounding spring washer **557**.

9.2.2 Ball valve with lever

- Mount spring gland follower **502** and packing gland follower **503**. Tighten packing nuts until there is no gap between packing gland follower **503** and spring gland follower **502**. See **section 1.2** and **10.2**.
- Seal any tapped bores still open with plugs.
- Mount stem extension **803**.
- Slide plain bearing **300** over the stem extension **803**.
- Slide cover flange **127** over the plain bearing **300** of the stem extension **803**.
- Attach with the hex. screws **901/1**.
- Slide cardan joint **809** over the stem extension **803** and secure it with the hex. screw **901/3** and the hex. nut with the clamping part **929**.



The actuating mechanism can be shortened by cutting the tube **710** and providing a new transverse bore for the screw **901/3**.

- Push the tube **710** into the cardan joint **809** and secure with the hex. screw **901/3** and the hex. nut with clamping part **929**.
- Push the stem **202/2** over the pipe **710** and secure with the hex. screw **901/3** and the hex. nut with clamping part **929**.
- Slide plain bearing **300** over stem **202/2**.
- Slide head flange **128** over the plain bearing **300** of the stem **202/2**.
- Place the throttling plate **519** on the head flange **128** and secure with hex. screw **901/3** and hex. nut **920/1**.
- Slide the disc **550/2** over the stem **202/2** and secure it with the circlip **932**.
- Fit the lockable lever **235** and the plate with the DIN designation and the opening direction using the hex. screw **901/2**.

9.3 Dismantling ball valve with ball and stem

It is possible with a ball valve with ball and stem to replace the seat rings and ball without dismantling the entire ball valve.

It is equally possible to remove the packing gland follower, spring gland follower and packing insert without dismantling the body.

The entire ball valve must merely be taken apart to remove the stem.

For sectional drawings, see [section 10](#).

9.3.1 Ball and seat rings

- Move ball **200** into the 'closed' position.
- Undo body nuts and bolts.
- Remove body end piece **102**.
- Remove ball **200** from the main body **101** by swivelling it.
- Remove seat rings **401** from the main body **101** and body end piece **102** and replace.

9.3.2 Packing bellows

- Remove lever **203**.
- Dismantle packing gland follower **503** and spring gland follower **502**.
- Take out grounding spring washer **557**.
- The thrust ring **405/1**, packing bellows **403** and retaining washer **526** are one unit and it is levered out using 2 screwdrivers.
- Remove retaining washer **526**.
- Separate thrust ring **405/1** and packing bellows **403** by pushing them apart.

9.3.3 Stem

- Dismantling as described in [section 9.3.1](#).
- Undo screw connection body end piece **102** / main body **101**.
- Remove body end piece **102**.
- Remove ball **200** and stem **202** in closed position. Make sure that you do not damage the body lining.
- Swivel ball **200** from stem **202**.

9.4 Assembly

- Prior to assembly all parts are to be cleaned and the plastic-lined parts checked for damage.
- Insert seat rings **401** in the main body **101** and body end piece **102**.
- Insert stem **202** from inside into the main body **101**.
- Move stem **202** into the 'closed' position.

Swivel ball **200** into the stem **202**. Any pressure relief or drain bore must lie on the p1 side in the "off" position. See also [section 6.2](#).

- Mount body end piece **102**. Tighten the greased housing screws cross over with a tightening torque according to [section 1.2](#).

9.4.1 Packing bellows

- Press thrust ring **405/1** into packing bellows **403**.
- Install retaining washer **526**.
- Press unit into main body **101**.
- Press in grounding spring washer **557**.

9.4.2 Ball valve with lever

- Mount spring gland follower **502** and packing gland follower **503**. Tighten packing nuts until there is no gap between packing gland follower **503** and spring gland follower **502**. See [section 1.2](#) and [10.2](#).
- Seal any tapped bores still open with plugs.
- Mount stem extension **803**.
- Slide plain bearing **300** over the stem extension **803**.
- Slide cover flange **127** over the plain bearing **300** of the stem extension **803**.
- Attach with the hex. screws **901/1**.
- Slide cardan joint **809** over the stem extension **803** and secure it with the hex. screw **901/3** and the hex. nut with the clamping part **929**.



The actuating mechanism can be shortened by cutting the tube **710** and providing a new transverse bore for the screw **901/3**.

- Push the tube **710** into the cardan joint **809** and secure with the hex. screw **901/3** and the hex. nut with clamping part **929**.
- Push the stem **202/2** over the pipe **710** and secure with the hex. screw **901/3** and the hex. nut with clamping part **929**.
- Slide plain bearing **300** over stem **202/2**.
- Slide head flange **128** over the plain bearing **300** of the stem **202/2**.
- Place the throttling plate **519** on the head flange **128** and secure with hex. screw **901/3** and hex. nut **920/1**.
- Slide the disc **550/2** over the stem **202/2** and secure it with the circlip **932**.
- Fit the lockable lever **235** and the plate with the DIN designation and the opening direction using the hex. screw **901/2**.

NKS-T/F**9.5 Notes for assembly**

- The flexible inlay **521** expands during assembly. Do not cut off the overhang, but push back into the lower and upper part of the shell **120**.
- Before tightening the body screws **914/1** align the disc/stem unit **221** centrally in the closed position.
- Mark the position of the disc/stem unit **221** against body lining **409** at the hub, so permitting switching only to this point during later test switching.
- With disc/stem unit in closed position, tighten the body screws (**914/1**, as well **918/1** and **929/2**) until the gap between the upper and lower part of the shell **120** is ca. 5 mm.
- Open the valve several times counterclockwise (when viewing the stem unit) and close again in the opposite direction. A sealing edge can form in this way.



Never switch in the other direction of rotation over the sealing edge!

- Tighten the body bolts 1-2 mm when disc in closed position.
- Repeat the previously described process once or twice.
- When finally tightening the body bolts, pay attention to the torques provided in **section 1.2**.

9.6 Valve actuation

The valve stem has a pivot to attach a hand lever respectively a coupling.

Hand lever respectively pivot parallel to the axis of the pipeline: ➔ **Valve open**

Hand lever respectively pivot at right angles to the axis of the pipeline: ➔ **Valve closed**

In the case of a coupling, 2 red marks indicate the position of the disc on them.

Marks parallel to the axis of the pipeline:

➔ **Valve open**

Marks at right angles to the axis of the pipeline:

➔ **Valve closed**

9.6.1 Actuated with lever

The hand lever locks in the end positions. It is lockable with a commercially available padlock.

9.6.2 Remotely actuated

Richter butterfly valves can be remotely actuated by means of pneumatic, hydraulic or electric quarter-turn actuators equipped with a connection as per ISO 5211.

Couplings and brackets are available as accessories in the Richter range of products.

9.6.3 Required breakaway torque

The breakaway torque of the actuator must be at least as high as the breakaway torque of the butterfly valve, about 20% higher being better however.

Media of higher viscosity and/or those with solids may require an increased factor of safety when calculating the size of the actuator. This is particularly true for non-Newtonian fluids such as high polymer substances, suspensions, pastes, lubricants, resins, lacquers etc.

Admissible factors of safety lie in the range of 20 - 50% of the breakaway torque.

To prevent damage to the valve, particular attention must be paid to the torque M_{dmax} in **section 1.5**.

9.7 Tests

Following tests would be done after the assembly.

Measurement of the breakaway torque

The breakaway torque required for opening and closing the valve is to be ascertained. The maximum torque should not exceed the values given in **section 1.5**.

Tightness of valve opening and shaft bushing

The completed valves have to undergo a „leak test of the closure with air“.

The tightness of the shaft bushing (stuffing box) of each valve is tested. The holding time begins once the residual air has escaped from the stuffing box chamber.

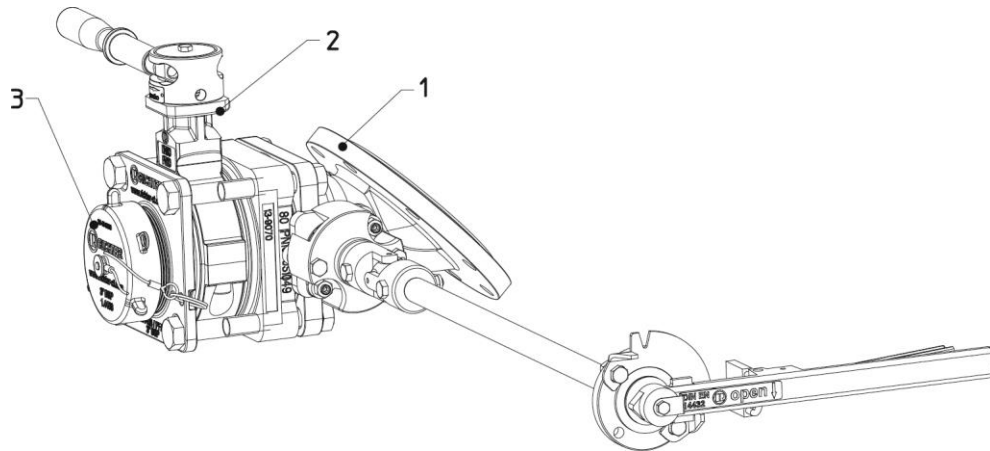
The tightness of the shaft bushing (stuffing box) of each valve is tested. The holding time begins once the residual air has escaped from the stuffing box chamber.

Tightness is verified according to DIN EN 12266-1 respectively MSS SP-67.

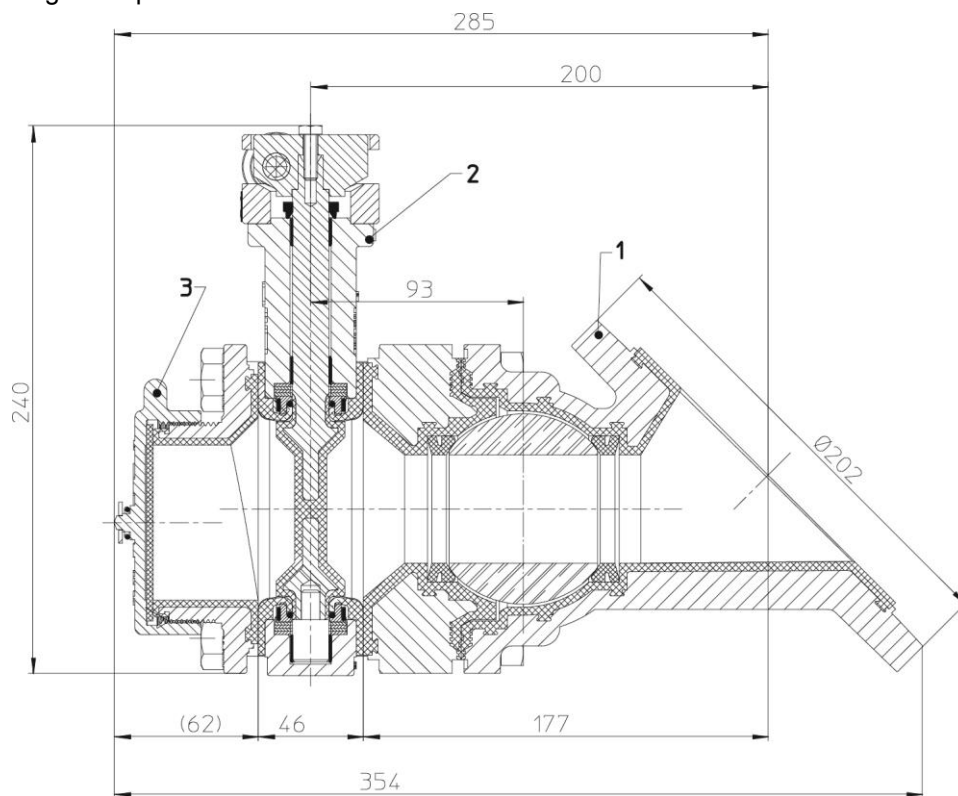
For detailed installation and inspection regulations for shut-off and control butterfly valves, see QM No. 0910-08-1005, available from Richter on request.

10 Drawings

10.1 Dimensional drawing Tank Bottom Valve System



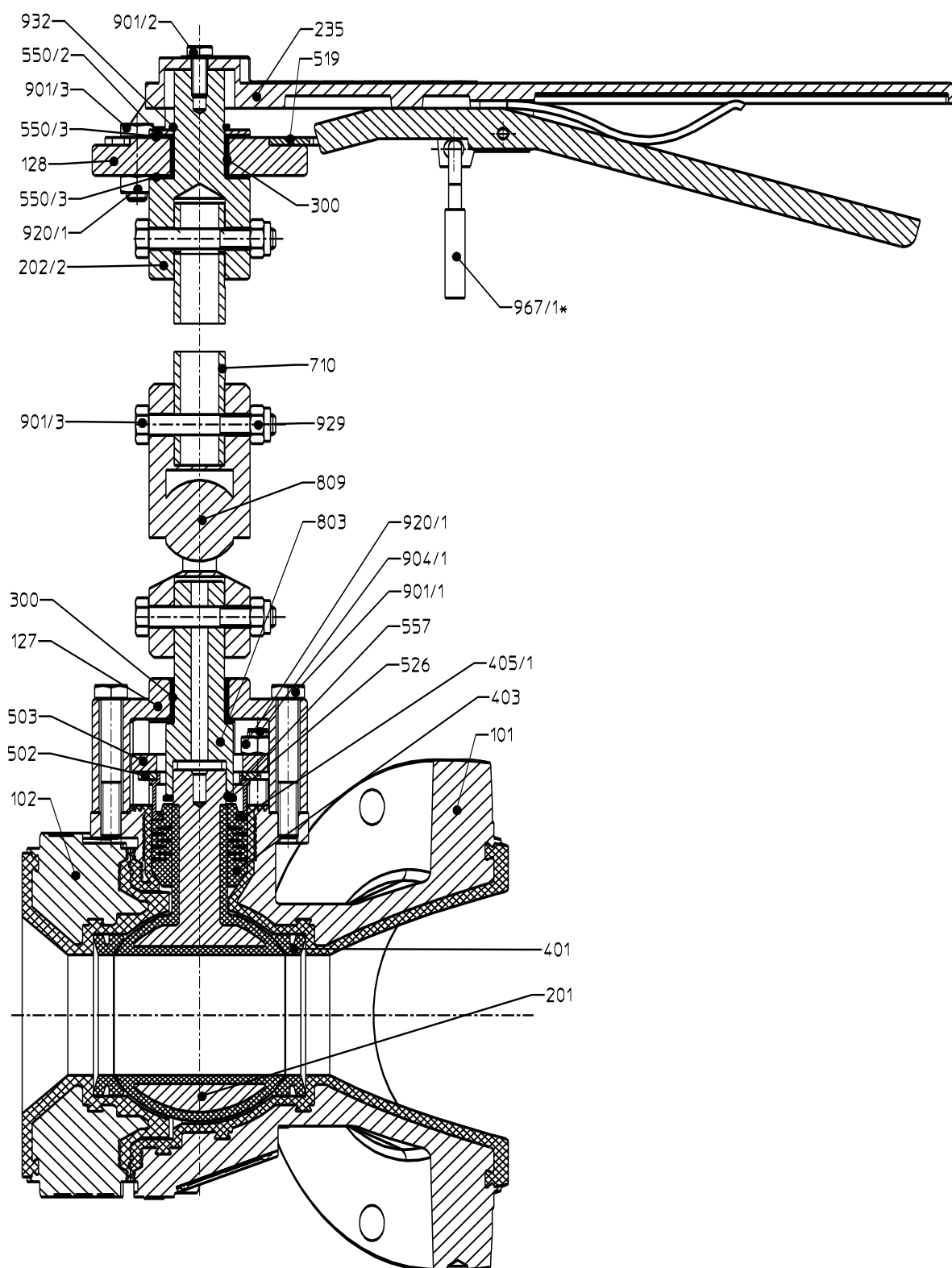
- 1 Foot valve TE/F
- 2 Butterfly valve NKS-T
- 3 Outlet flange & cap



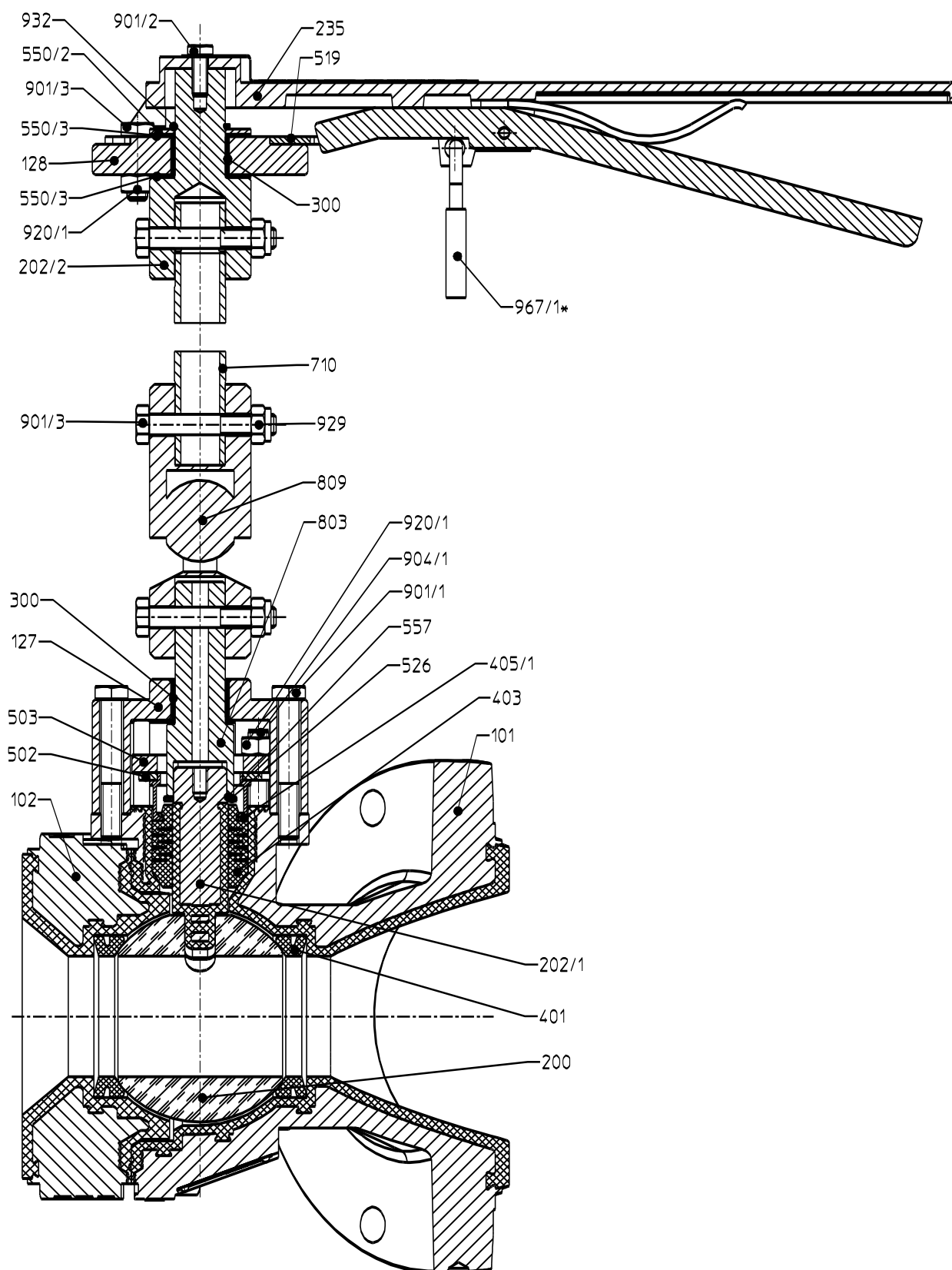
10.2 Legend TE/F

101	main body	554/1	washer
102	body end piece	557	grounding spring washer
127	cover flange	710	pipe
128	head flange	803	stem extension
200	ball	809	cardan joint
201	ball/stem unit	901/x	hex. screw
202/x	stem	904/1	setscrew
235	lever lockable	920/x	hex. nut
300	plain bearing	929	hex. nut with clamping part
401	seat ring	932	circlip
403	packing bellows	936/1	serrated washer
405/1	thrust ring	967/1 *	padlock
502	spring gland follower		
503	packing gland follower		
519	throttling plate		
526	retaining washer		
550/x	disc		

* not included in the delivery

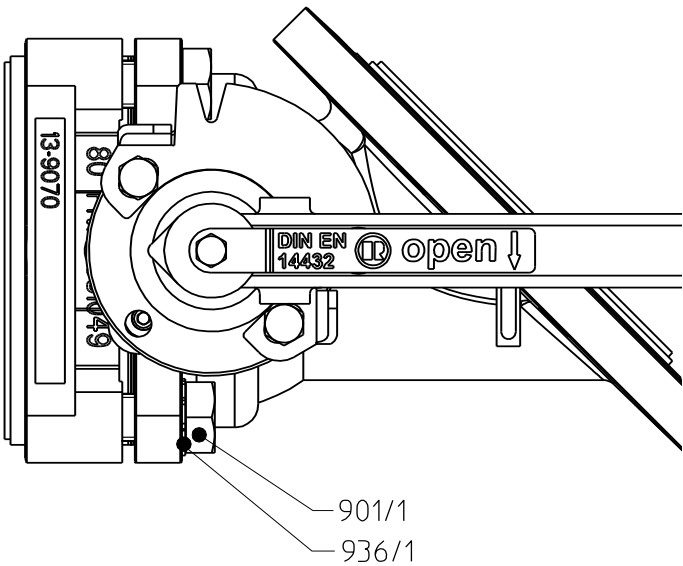
10.3 Sectional drawing **TE/F** with ball/stem unit

9520-00-3300_Schnitt1

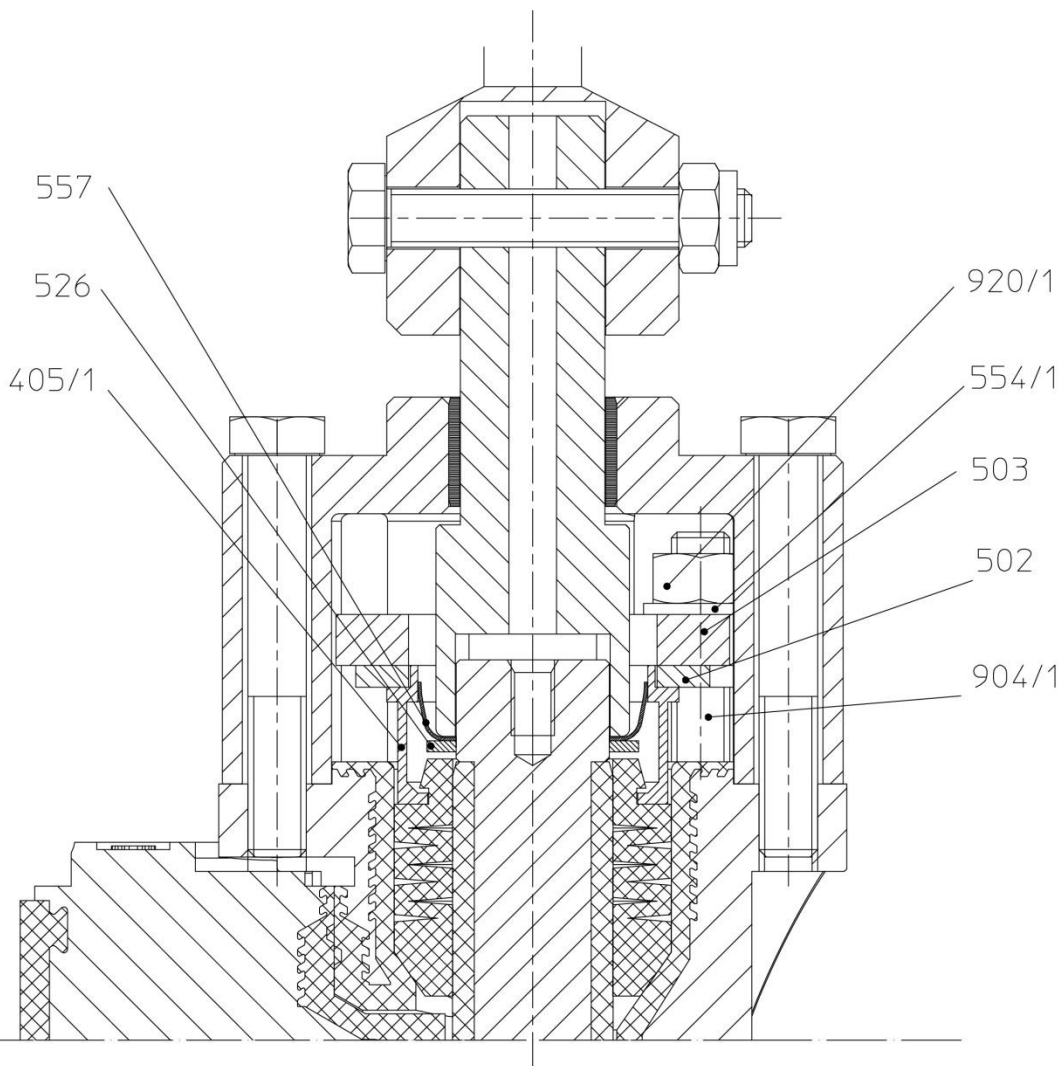
10.4 Sectional drawing **TE/F** with stem and Al₂O₃-ball

9520-00-3300_Schnitt2

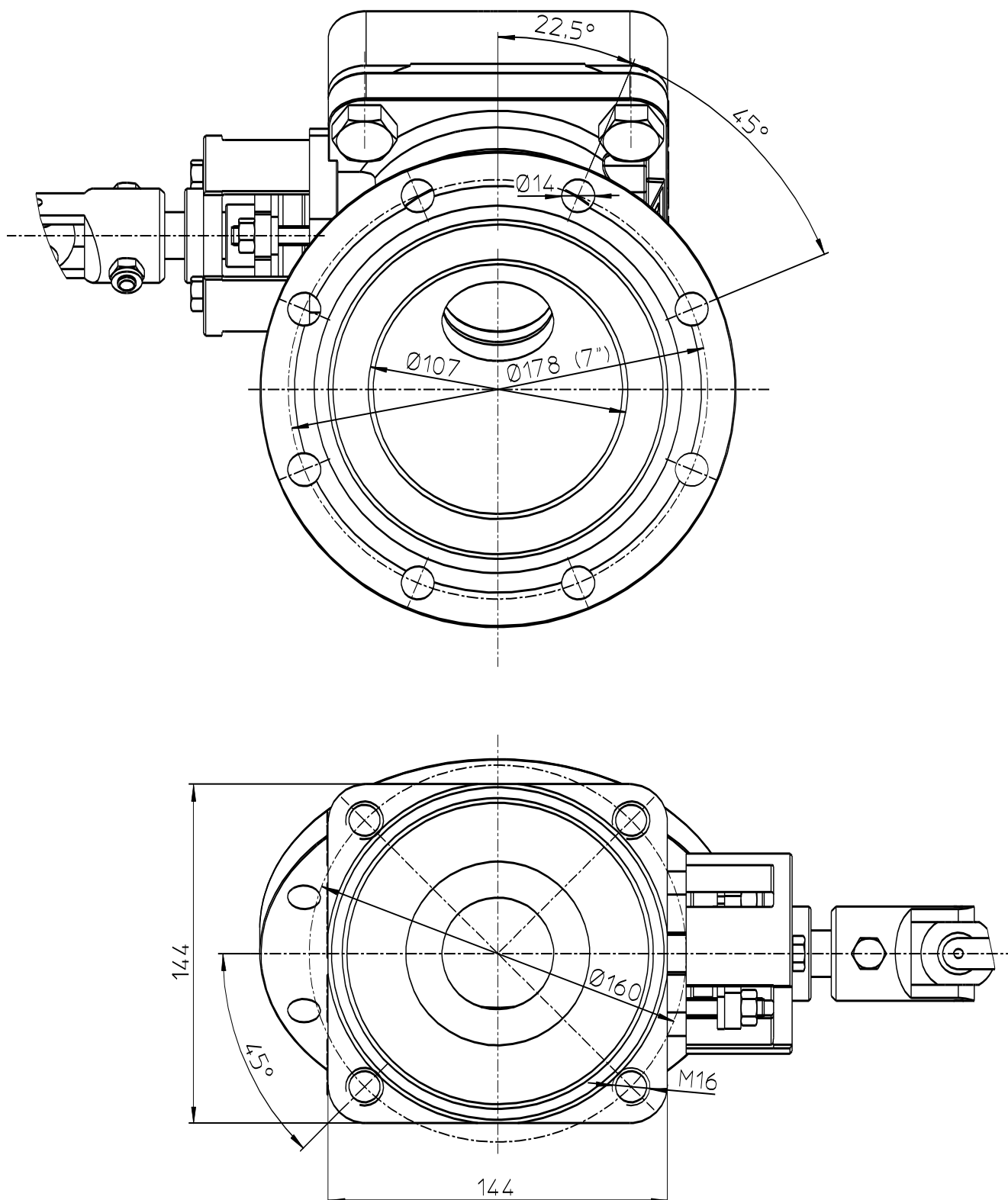
10.5 View **TE/F**



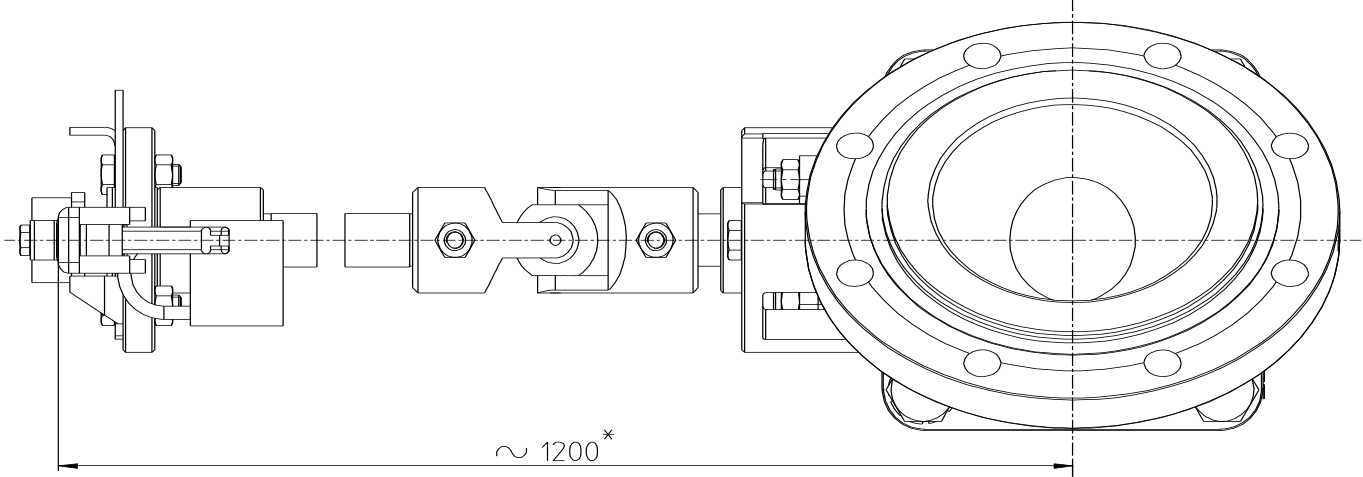
10.6 Section **TE/F**



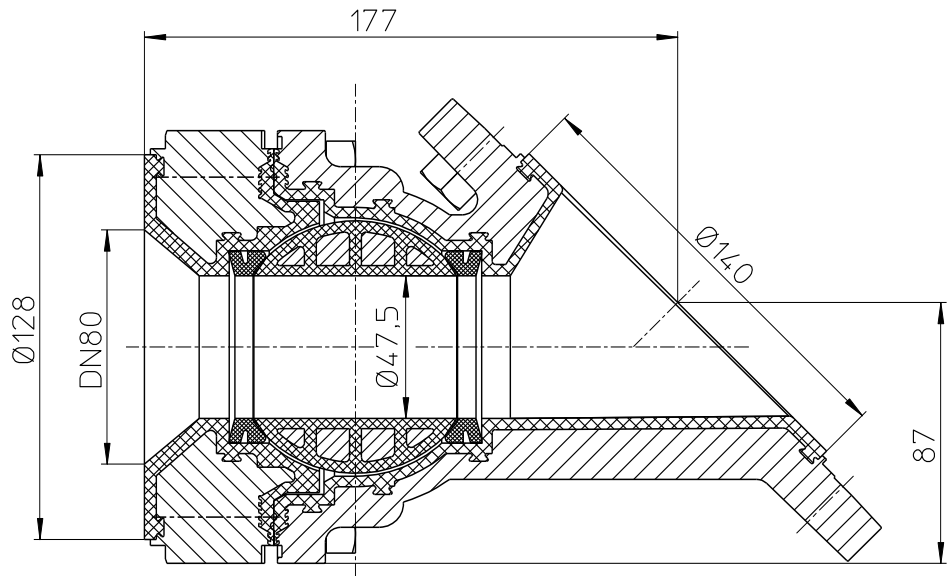
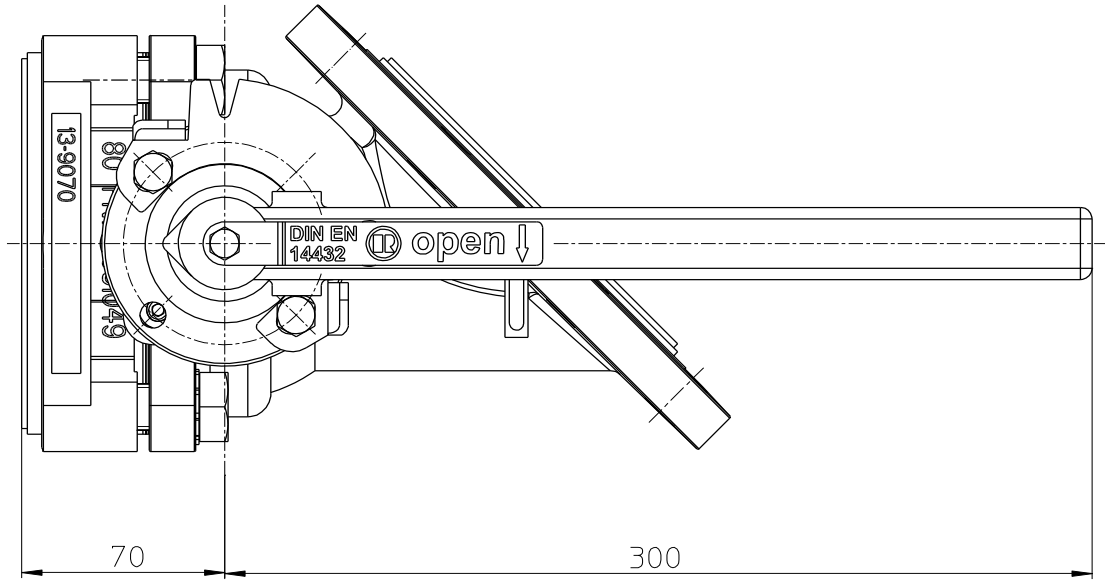
9520-00-3300_Schnitt3

10.7 Dimensional drawing **TE/F**

All dimensions in mm



* Shortened during assembly



All dimensions in mm

10.8 Flange connecting dimensions **TE/F**

45° Tank connection flange

DN		PN 10		
		ØD	Øk	n x d ₁
[mm]	[inch]	[mm]	[mm]	[mm]
80	3	200	178 (7")	8x14

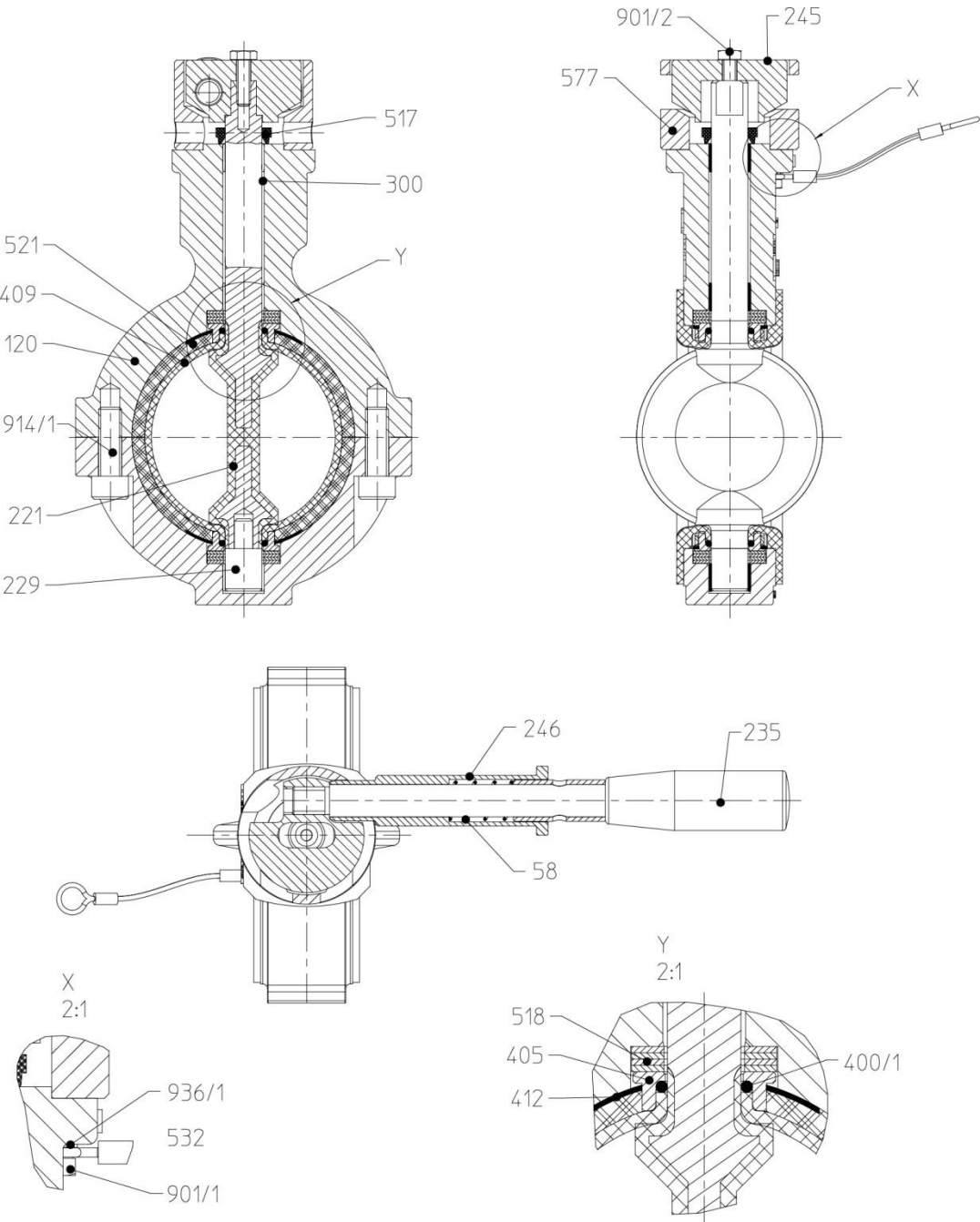
Square flange

DN		PN 10		
		Ø	Øk	n x d ₂
[mm]	[inch]	[mm]	[mm]	[mm]
80	3	144	160	4xM16

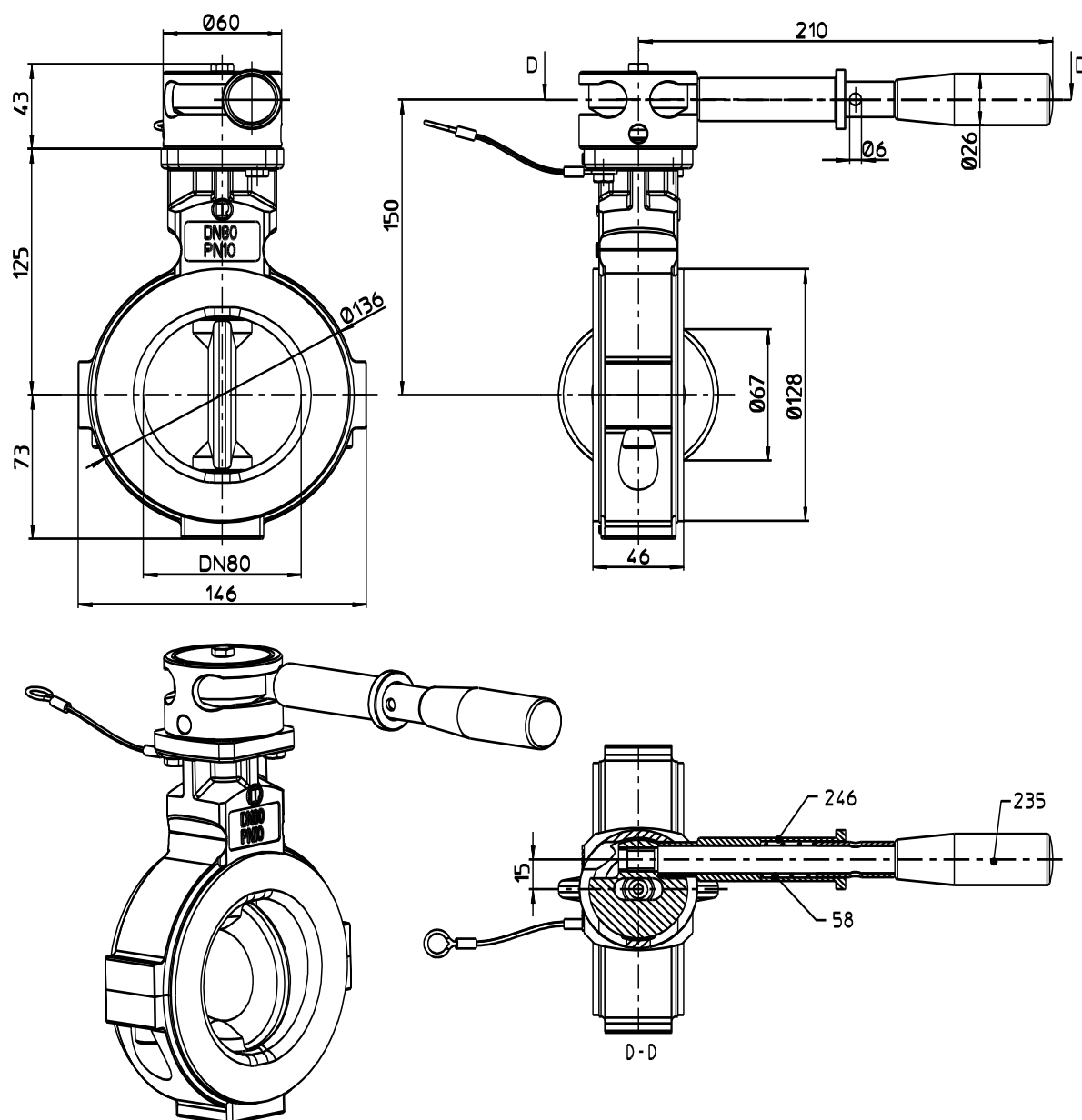
10.9 Legend NKS-T/F

120	shell
221	disc/stem unit
229	guide pin
300	plain bearing
400/1	O-Ring
405	thrust ring
409	body lining
412	pressure gasket
517	scraper ring
518	cup spring assembly
521	flexible inlay
532	grounding rope
901/1	hex. screw
936/1	toothed lock washer
<u>lever assembly</u>	
235	lever assembly
577	lever stop
245	hub
246	Locking sleeve
58	pressure spring
901/2	hex. screw

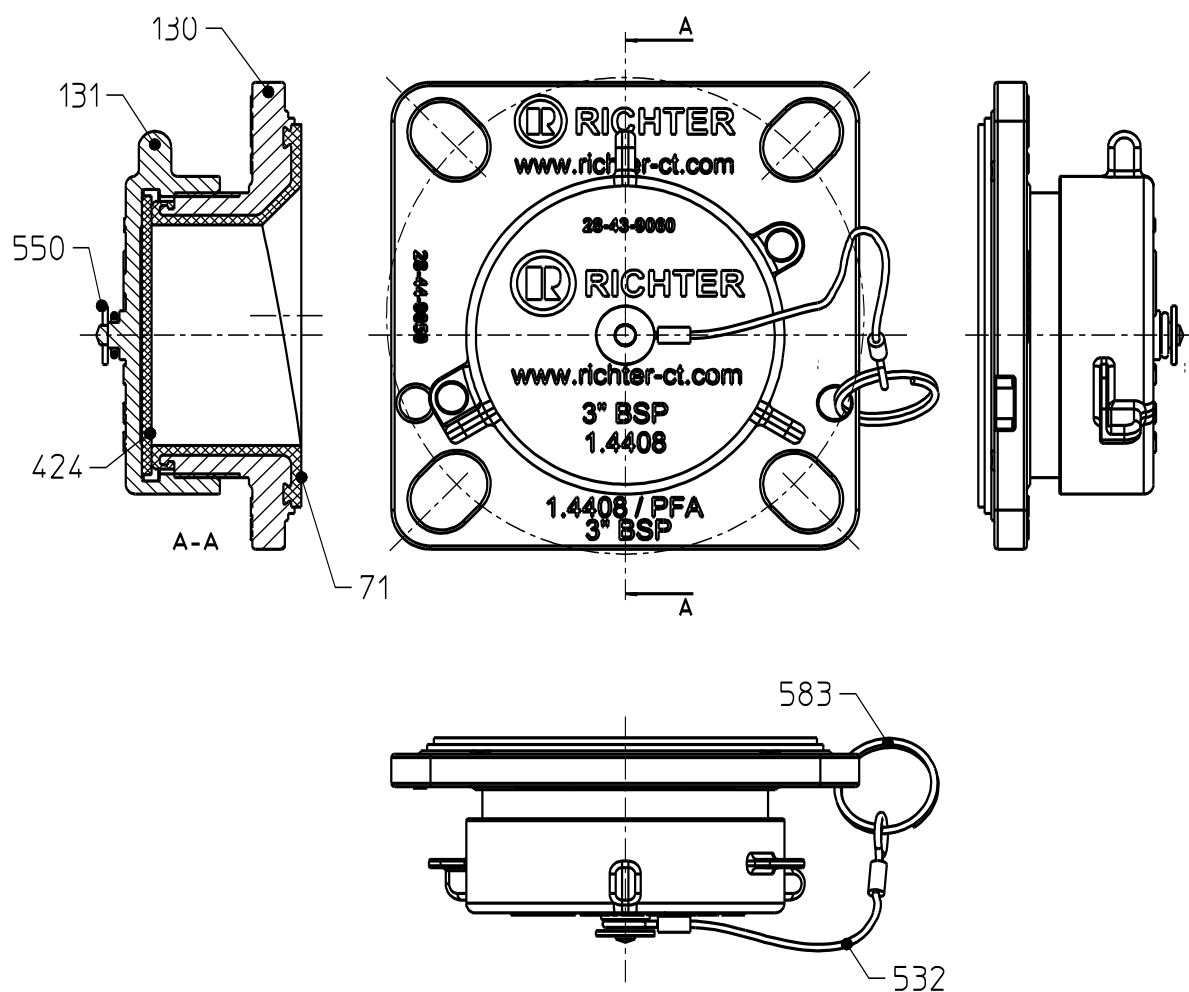
10.10 Sectional drawing **NKS-T/F**



10.11 Dimensional drawing NKS-T/F

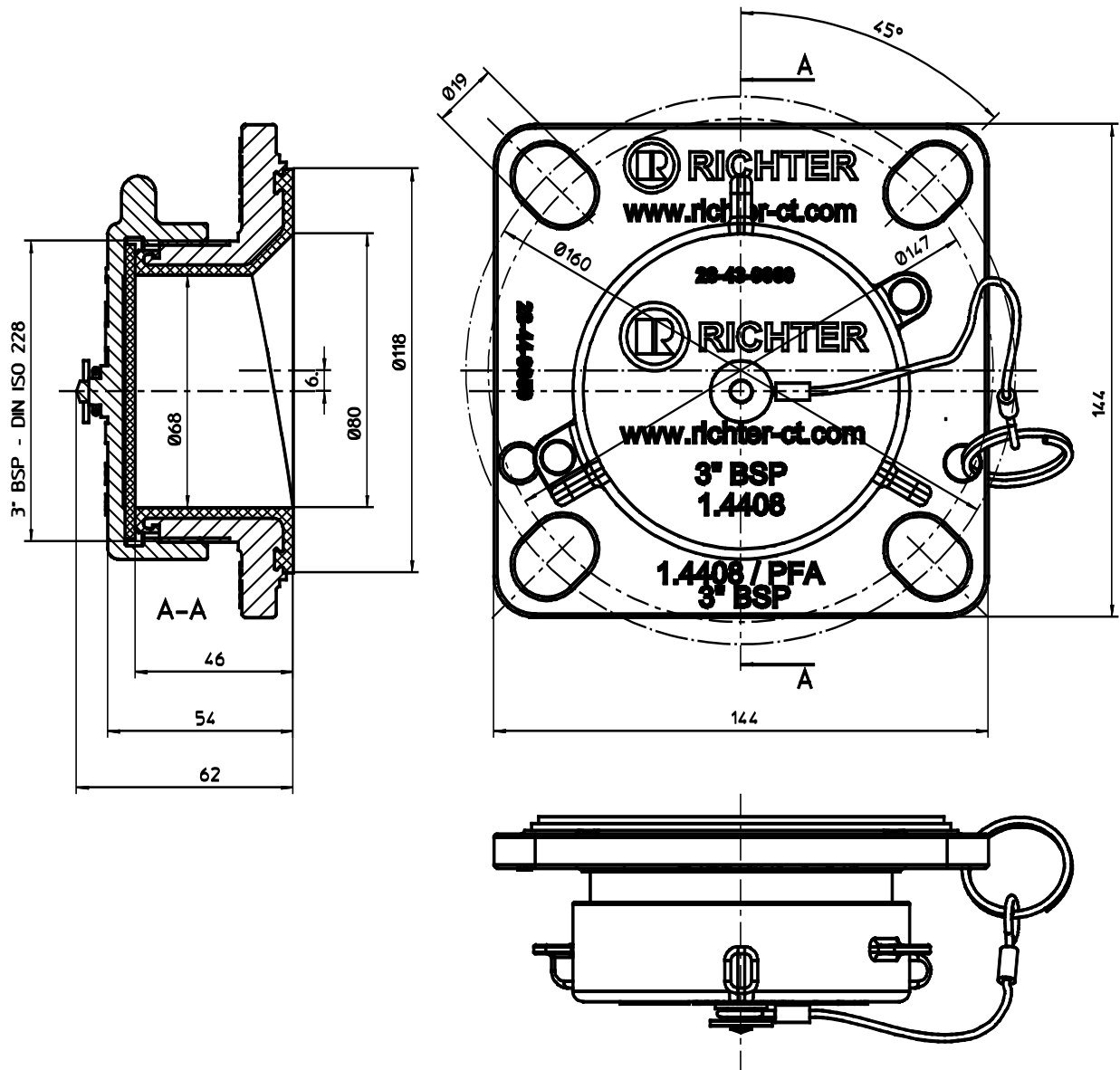


10.12 Sectional drawing 3" BSP



- | | |
|-----|-----------------|
| 71 | Lining material |
| 130 | Outlet flange |
| 131 | cap |
| 424 | Sealing washer |
| 532 | grounding rope |
| 550 | disc |
| 583 | key ring |

10.13 Dimensional drawing **3" BSP**



CE **Konformitätserklärung** nach EN ISO/IEC 17050
Declaration of Conformity according to EN ISO/IEC 17050

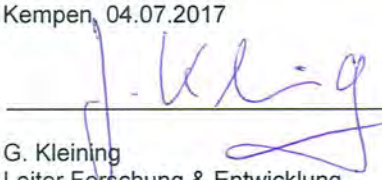
Produkt <i>Product</i>	Kunststoffausgekleidete Gefahrgutarmaturen <i>Plastic lined dangerous good valves</i>		
Bauart <i>Design</i>	Kugelhahn, Kompakt-Kugelhahn, Bodenventil, Absperrklappe <i>Ball valve, sandwich ball valve, foot valve, shut-off butterfly valve</i>		
Baureihe <i>Serie</i>	KN..., KNA..., BVA..., KK..., TE..., NKS-T		
Nennweite <i>Size</i>	DN 15 bis DN 200, ½" bis 8" <i>DN 15 to DN 200, ½" to 8"</i>		
Seriennummer <i>Series number</i>	ab/from 19.07.2016		
EU-Richtlinie <i>EU-Directive</i>	2014/68/EU Druckgeräte-Richtlinie ADR 2015 – Kapitel 6.8, RID	2006/42/EG ²⁾	Maschinenrichtlinie <i>Directive Machinery</i>
	2014/68/EU Pressure Equipment ADR 2015 – chapter 6.8, RID	2006/42/EC ²⁾	
Angewandte Technische Spezifikation <i>Applied Technical Specification</i>	DIN EN 14432 AD 2000		
Überwachungsverfahren <i>Surveillance Procedure</i>	2014/68/EU Zertifizierungsstelle für Druckgeräte der TÜV Nord Systems GmbH & Co. KG Große Bahnstraße 31 D-22525 Hamburg Notified Body 0045		
Konformitätsbewertungs- verfahren 2014/68/EU <i>Conformity assessment procedure 2014/68/EU</i>	Modul H Zertifikats Nr. 07/202/1411/Z/0091/16/D		
Kennzeichnung <i>Marking</i>	DIN EN 14432 2014/68/EU ¹⁾ 2006/42/EG ²⁾	≥ DN 32, ≥ 1" 2006/42/EC ²⁾	EN 14432 CE 0045 CE

Das Unternehmen Richter Chemie-Technik GmbH bescheinigt hiermit, dass die o.a. Baureihen die grundsätzlichen Anforderungen der aufgeführten Richtlinien und Normen erfüllen.
Richter Chemie-Technik GmbH confirms that the basic requirements of the above specified directives and standards have been fulfilled.

¹⁾ Für nicht aufgeführte Nennweiten ist eine Kennzeichnung nicht zulässig.
For sizes not listed a marking is not permitted.

²⁾ Alle Armaturen, mit Ausnahme der Armaturen mit Handbetätigung.
For all valves, with exceptions to valves with hand operation

Kempen, 04.07.2017


G. Kleining
Leiter Forschung & Entwicklung
Manager Research & Development


M. Pohlmann
Leiter Qualitätsmanagement
Quality Manager

Erstellt/Compiled: EPE/AS
Genehmigt/Approved: CRQ/MP

am/on: 04.07.2017
am/on: 04.07.2017

Seite/Page: 1
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Neu: F722039-04_de-en

Herstellererklärung ATEX
Richtlinie 2014/34/EU
Manufacturer's Declaration ATEX
Directive 2014/34/EU

Alle Richter Armaturen inkl. Absperr-, Regel- und Sicherheitsventile
All Richter Valves incl. Shut-off, Control and Safety Valves

Die oben bezeichneten Armaturen wurden einer Risikoanalyse nach der Richtlinie 2014/34/EU mit folgendem Ergebnis unterzogen:

The valves specified above underwent a risk analysis according to Directive 2014/34/EU with the following result:

- **Richter Armaturen besitzen keine eigenen potentiellen Zündquellen. Die Armaturen können sowohl manuell als auch mechanisch/elektrisch angetrieben werden.**
Die Armaturen fallen nicht in den Anwendungsbereich der ATEX-Richtlinie 2014/34/EU und dürfen deshalb auch nicht danach gekennzeichnet werden.
Richter valves do not have their own potential sources of ignition. The valves can be actuated manually as well as mechanically/electrically.
ATEX Directive 2014/34/EU is not applicable to these valves. Therefore, it is not allowed to mark the valves according to that Directive.
- **Die Armaturen dürfen in explosionsgefährdeten Bereichen eingesetzt werden.**
The valves can be used in potentially explosive atmospheres.
- **Dennoch müssen für den Armatureneinsatz in explosionsgefährdeten Bereichen Sicherheitshinweise bzgl. des Explosionsschutzes beachtet werden. Richter hat hierzu die Betriebsanleitungen um den Zusatz „Sicherheitshinweise für den Einsatz in explosionsgefährdeten Bereichen in Anlehnung an die Richtlinie 2014/34/EU“ erweitert.**
However, when using the valves in potentially explosive atmospheres, specific safety notes on explosion protection must be observed. Here, Richter has extended their operating manuals to include the supplement „Safety notes for applications in potentially explosive atmospheres based on Directive 2014/34/EU“.

Ergänzender Hinweis: *Supplementary note:*

- **Elektrische/mechanische Antriebe müssen einer eigenen Konformitätsbewertung nach ATEX unterzogen werden.**
Electric/mechanical actuators must undergo a separate conformity assessment.

Kempen, 20.04.2016

Richter Chemie-Technik GmbH


M. Böhm

Leiter Qualitätsmanagement
Quality Manager

Herstellererklärung / Manufacturer's Declaration

TA-Luft / German Clean Air Act (TA-Luft)

Richter Tankentleerungskugelhahn / Richter Tank Drain Ball Valve

Hiermit erklären wir, dass die Tankentleerungskugelhähne der Baureihen
Hereby we declare, that the tank drain ball valves of the series

TE

die Anforderung bezüglich der Gleichwertigkeit gemäß Ziffer 5.2.6.4 der Technischen Anleitung-Luft (TA-Luft vom 01.10.2002 / VDI 2440 Ziffer 3.3.1.3) erfüllen.

Grundlage sind die "Prüfgrundsätze für den Eignungsnachweis von Spindelabdichtungen in Armaturen als gleichwertig nach TA-Luft" des TÜV Süddeutschland Bau und Betrieb GmbH vom 22.09.1992.

Zusätzlich beinhaltet die Herstellererklärung den Eignungsnachweis einer Spindelabdichtung und einer inneren Flanschverbindung gemäß VDI 2440 hinsichtlich Dichtheit bzw. der Einhaltung der spezifischen Leckagerate nach TA-Luft $\lambda \leq 10^{-4} \frac{\text{mbar} \cdot \text{l}}{\text{s} \cdot \text{m}}$ und einer erweiterten Prüfung unter Betriebsbedingungen.

Voraussetzung für die Gültigkeit der Herstellererklärung ist das Beachten und Einhalten der Betriebsanleitung. Insbesondere sind regelmäßige Wartungsintervalle durchzuführen und die dichtheitsrelevanten Schraubverbindungen zu überprüfen und, wenn notwendig, nachzuziehen.

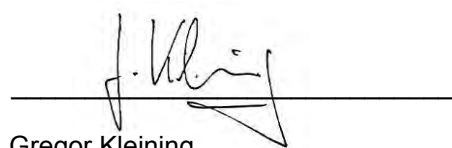
meets the requirement relating to the equivalence according to Section 5.2.6.4 of the German Clean Air Act (Clean Air Act dated 01.10.2002 / VDI 2440 Section 3.3.1.3).

The basics are the "Testing principles for the suitability verification of stem seals in valves as being equivalent in accordance to the German Clean Air Act of the TÜV Süddeutschland Bau und Betrieb GmbH dated 22 September 1992.

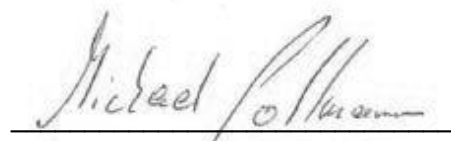
Additionally, the manufacture's declaration contains the suitability verification of a stem seal and internal flange connection in accordance to VDI 2440 with regard to tightness and the observance of the specific leakage rate according to the German Clean Air Act $\lambda \leq 10^{-4} \frac{\text{mbar} \cdot \text{l}}{\text{s} \cdot \text{m}}$ and an extended test under the above-mentioned operating conditions.

Manufacturer's declaration validity is dependent on the operating instructions being read and observed. In particular, service must be conducted at regular intervals and the bolted connection relevant for tightness should be inspected and retightened if necessary.

Kempen, 31.03.2016



Gregor Kleining
Leiter Forschung & Entwicklung
Manager Research & Development



Michael Pohlmann
Leiter Qualitätsmanagement
Quality Manager

Kempen, 31.03.2016

SIL

Declaration by the Manufacturer

Functional Safety according to IEC 61508

We declare, that the devices

TE

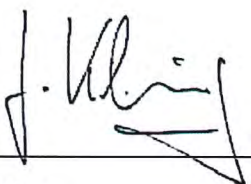
are suitable for use in a safety related application, if the safety instructions and the following parameters are observed:

Device Type:	A
Proof Test Interval:	≤ 1 year
HFT:	0 (single channel usage)
λ_{SU}:	129 FIT
λ_{SD}:	14 FIT
λ_{DU}:	108 FIT
λ_{DD}:	36 FIT
SFF:	62,5 %
PFD_{Avg}:	$4,73 \cdot 10^{-4}$ (for $T_{Proof} = 1$ year)
MTBF:	398 years

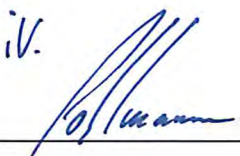
Safety Integrity Level: **SIL 2**

Usable lifetime: According to IEC 61508-2 §7.4.7.4 values of up to 10 years can be assumed. Different values can be used based on the experience of the user. In principle, critical applications and cases of operation (e. g. highly permeable or solid loaded media) can reduce the usable lifetime. For safe and reliable operation please follow the relevant instructions documented in the manual.

The evidence is based on proven in use combined with a FMEDA.



G. Kleining
Leiter Forschung & Entwicklung
Manager Research & Development



M. Pohlmann
Leiter Qualitätsmanagement
Quality Manager

Safety Information / **Declaration of No Objection** Concerning the Contamination of Richter-Pumps, -Valves and Components

1 SCOPE AND PURPOSE

Each entrepreneur (operator) carries the responsibility for the health and safety of his employees. This extends also to the personnel, who implements repairs with the operator or with the contractor.

Enclosed declaration is for the information of the contractor concerning the possible contamination of the pumps, valves and component sent in for repair. On the basis of this information for the contractor is it possible to meet the necessary preventive action during the execution of the repair.

Note: The same regulations apply to repairs **on-site**.

2 PREPARATION OF DISPATCH

Before the dispatch of the aggregates the operator must fill in the following declaration completely and attach it to the shipping documents. The shipping instructions indicated in the respective manual are to be considered, for example:

- Discharge of operational liquids
- remove filter inserts
- lock all openings hermetically
- proper packing
- Dispatch in suitable transport container
- Declaration of the contamination fixed **outside!!** on the packing

Declaration about the Contamination of Richter Pumps, -Valves and Components

The repair and/or maintenance of pumps, valves and components can only be implemented if a completely filled out declaration is available. If this is not the case, delay of the work will occur. If this declaration is not attached to the devices, which have to be repaired, the transmission can be rejected.

Every aggregate has to have it's own declaration.

This declaration may be filled out and signed only by authorized technical personnel of the operator.

Contractor/dep./institute :		Reason for transmitting ☒ Please mark the applicable	
Street :		Repair: ☐ subject to fee ☐ Warranty	
Postcode, city:		Exchange: ☐ subject to fee ☐ Warranty	
Contact person:		☐ Exchange/ Replacement already initiated/received	
Phone :	Fax :	Return: ☐ Leasing ☐ Loan ☐ for credit note	
End user :			
A. Details of Richter-product:		Failure description:	
Classification:			
Article number:		Equipment:	
Serial number:		Application tool:	
		Application process:	
B. Condition of the Richter-product:			
	no ¹⁾ yes no		
Was it in operation ?	☐ ☐	Contamination :	
Drained (product/operating supply item) ?	☐ ☐	no ¹⁾ yes	
All openings hermetically locked!	☐ ☐	toxic	
Cleaned ?	☐ ☐	caustic	
If yes, with which cleaning agent:		inflammable	
and with which cleaning method:		explosive ²⁾	
		mikrobiological ²⁾	
		radioactive ³⁾	
		other pollutant	
¹⁾ if "no", then forward to D. ²⁾ Aggregates, which are contaminated with microbiological or explosive substances, are only accepted with documented evidence of an approved cleaning. ³⁾ Aggregates, which are contaminated with radioactive substances, are not accepted in principle.			
C. Details of the discharged materials (must be filled out imperatively)			
1. With which materials did the aggregate come into contact ? Trade name and/or chemical designation of operational funds and discharged materials, material properties, e.g. as per safety data sheet (e.g. toxic, inflammable, caustic)			
X Trade name:		Chemical designation:	
a)			
b)			
c)			
d)			
2. Are the materials specified above harmful to health ?		no yes	
3. Dangerous decomposition products during thermal load ?		☐ ☐	
If yes, which ones ?		☐ ☐	

D. Mandatory declaration: We assure that the data in this explanation are truthful and complete and as a signatory I am able to form an opinion about this. We are aware that we are responsible towards the contractor for damages, which results from incomplete and incorrect data. We commit ourselves to exempt the contractor from claims for damages of thirds resulting from incomplete or incorrect data. We are aware that we are directly responsible towards thirds, irrespective of this declaration, which belongs in particularly to the employees of the contractor consigned with the handling repair of the product.

Name of the authorized person
(in block letters):

Date

Signature

Company stamp

08.01.2015

Declaration of no objection

Dear Sirs,

The compliance with laws for the industrial safety obligates all commercial enterprises to protect their employees and/or humans and environment against harmful effects while handling dangerous materials. The laws are such as: the Health and Safety at Work Act (ArbStättV), the Ordinance on Harzadous Substances (GefStoffV, BIOSTOFFV), the procedures for the prevention of accidents as well as regulations to environmental protection, e.g. the Waste Management Law (AbfG) and the Water Resources Act (WHG)

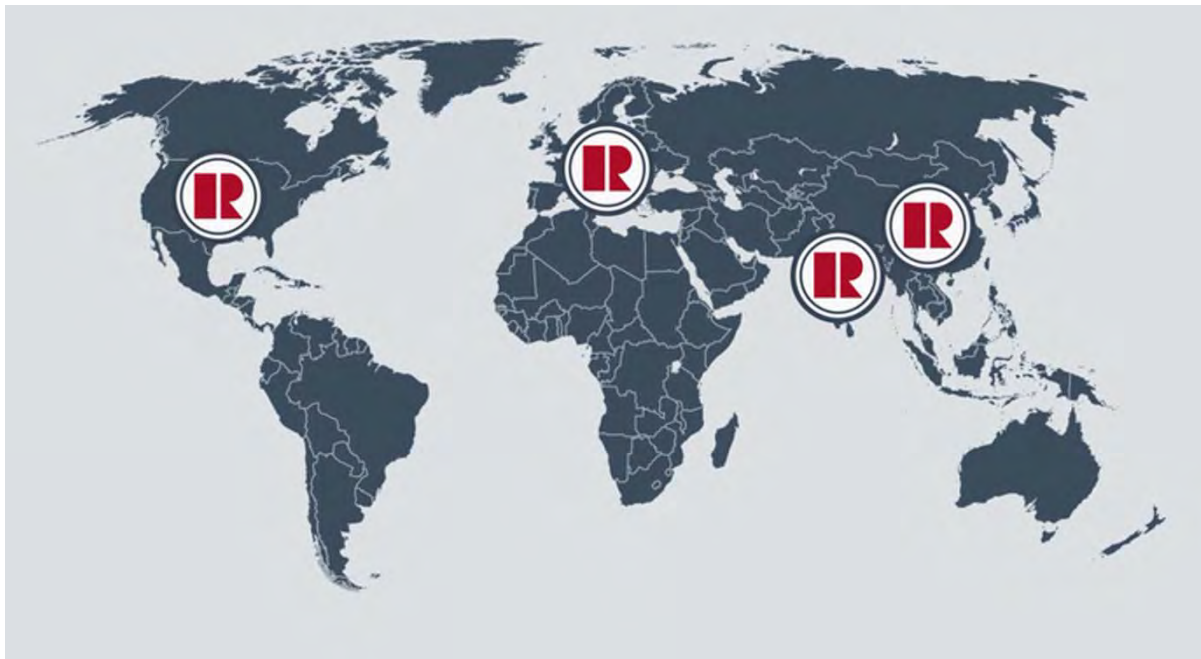
An inspection/repair of Richter products and parts will only take place, if the attached explanation is filled out correctly and completely by authorized and qualified technical personnel and is available.

In principle, radioactively loaded devices sent in, are not accepted.

Despite careful draining and cleaning of the devices, safety precautions should be necessary however, the essential information must be given.

The enclosed declaration of no objection is part of the inspection/repair order. Even if this certificate is available, we reserve the right to reject the acceptance of this order for other reasons.

Best regards
RICHTER CHEMIE-TECHNIK GMBH



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